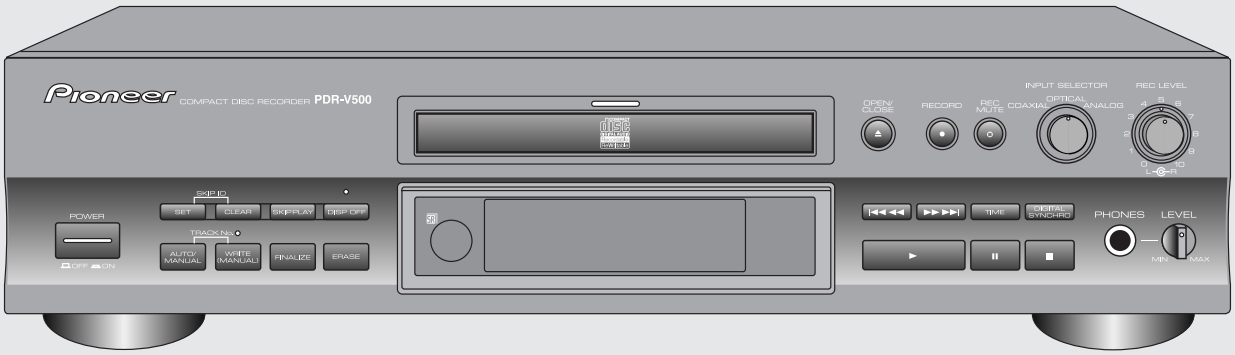
Pioneer

Operating Instructions

PDR-V500

COMPACT DISC RECORDER



Thank you for buying this Pioneer product.
Please read through these operating instructions so you will know how to operate your model properly. After you have finished reading the instructions, put them away in a safe place for future reference.

The CONTENTS can be found on page 5.

IMPORTANT

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

CAUTION:
TO PREVENT THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

IMPORTANT SAFETY INSTRUCTIONS

READ INSTRUCTIONS — All the safety and operating instructions should be read before the product is operated.

RETAIN INSTRUCTIONS — The safety and operating instructions should be retained for future reference.

HEED WARNINGS — All warnings on the product and in the operating instructions should be adhered to.

FOLLOW INSTRUCTIONS — All operating and use instructions should be followed.

CLEANING — Unplug this product from the wall outlet before cleaning. The product should be cleaned only with a polishing cloth or a soft dry cloth. Never clean with furniture wax, benzine, insecticides or other volatile liquids since they may corrode the cabinet.

ATTACHMENTS — Do not use attachments not recommended by the product manufacturer as they may cause hazards.

WATER AND MOISTURE — Do not use this product near water — for example, near a bathtub, wash bowl, kitchen sink, or laundry tub; in a wet basement; or near a swimming pool; and the like.

ACCESSORIES — Do not place this product on an unstable cart, stand, tripod, bracket, or table. The product may fall, causing serious injury to a child or adult, and serious damage to the product. Use only with a cart, stand, tripod, bracket, or table recommended by the manufacturer, or sold with the product. Any mounting of the product should follow the manufacturer's instructions, and should use a mounting accessory recommended by the manufacturer.

CART — A product and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the product and cart combination to overturn.

VENTILATION — Slots and openings in the cabinet are provided for ventilation and to ensure reliable operation of the product and to protect it from overheating, and these openings must not be blocked or covered. The openings should never be blocked by placing the product on a bed, sofa, rug, or other similar surface. This product should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided or the manufacturer's instructions have been adhered to.

POWER SOURCES — This product should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supply to your home, consult your product dealer or local power company.

LOCATION – The appliance should be installed in a stable location.

NONUSE PERIODS – The power cord of the appliance should be unplugged from the outlet when left unused for a long period of time.

GROUNDING OR POLARIZATION

- If this product is equipped with a polarized alternating current line plug (a plug having one blade wider than the other), it will fit into the outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug should still fail to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug.
- If this product is equipped with a three-wire grounding type plug, a plug having a third (grounding) pin, it will only fit into a grounding type power outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the grounding type plug.

POWER-CORD PROTECTION — Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the product.

OUTDOOR ANTENNA GROUNDING — If an outside antenna or cable system is connected to the product, be sure the antenna or cable system is grounded so as to provide some protection against voltage surges and built-up static charges. Article 810 of the National Electrical Code, ANSI/NFPA 70, provides information with regard to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna-discharge unit, connection to grounding electrodes, and requirements for the grounding electrode. See Figure A.

LIGHTNING — For added protection for this product during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna or cable system. This will prevent damage to the product due to lightning and power-line surges.

POWER LINES — An outside antenna system should not be located in the vicinity of overhead power lines or other electric light or power circuits, or where it can fall into such power lines or circuits. When installing an outside antenna system, extreme care should be taken to keep from touching such power lines or circuits as contact with them might be fatal.

OVERLOADING — Do not overload wall outlets, extension cords, or integral convenience receptacles as this can result in a risk of fire or electric shock.

OBJECT AND LIQUID ENTRY — Never push objects of any kind into this product through openings as they may touch dangerous voltage points or short-out parts that could result in a fire or electric shock. Never spill liquid of any kind on the product.

SERVICING — Do not attempt to service this product yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.

DAMAGE REQUIRING SERVICE — Unplug this product from the wall outlet and refer servicing to qualified service personnel under the following conditions:

- When the power-supply cord or plug is damaged.
- If liquid has been spilled, or objects have fallen into the product.
- If the product has been exposed to rain or water.
- If the product does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the product to its normal operation.
- If the product has been dropped or damaged in any way.
- When the product exhibits a distinct change in performance — this indicates a need for service.

REPLACEMENT PARTS — When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock, or other hazards.

SAFETY CHECK — Upon completion of any service or repairs to this product, ask the service technician to perform safety checks to determine that the product is in proper operating condition.

WALL OR CEILING MOUNTING — The product should not be mounted to a wall or ceiling.

HEAT — The product should be situated away from heat sources such as radiators, heat registers, stoves, or other products (including amplifiers) that produce heat.

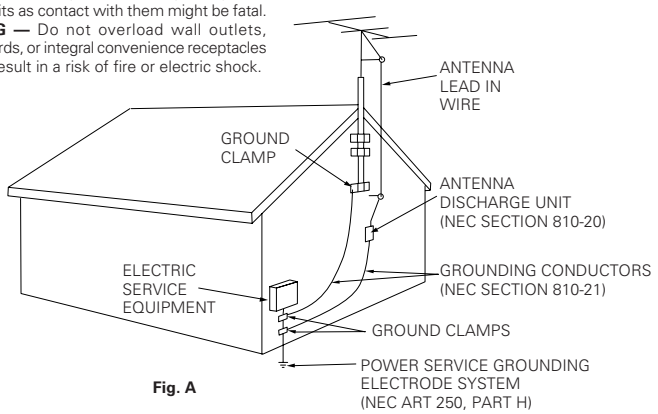


Fig. A

NEC — NATIONAL ELECTRICAL CODE

WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

IMPORTANT NOTICE

The serial number for this equipment is located on the rear panel. Please write this serial number on your enclosed warranty card and keep it in a secure area. This is for your security.

CAUTION:
This product satisfies FCC regulations when shielded cables and connectors are used to connect the unit to other equipment. To prevent electromagnetic interference with electric appliances such as radios and televisions, use shielded cables and connectors for connections.

[For Canadian model]

CAUTION: TO PREVENT ELECTRIC SHOCK DO NOT USE THIS (POLARIZED) PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

ATTENTION: POUR PREVENIR LES CHOCS ELECTRIQUES NE PAS UTILISER CETTE FICHE POLARISEE AVEC UN PROLONGATEUR, UNE PRISE DE COURANT OU UNE AUTRE SORTIE DE COURANT, SAUF SI LES LAMES PEUVENT ETRE INSEREES A FOND SANS EN LAISSER AUCUNE PARTIE A DECOUVERT.

[For U.S. model]
DANGER – LASER RADIATION WHEN OPEN. AVOID DIRECT EXPOSURE TO BEAM.
This caution can be found on the rear panel of the unit.

CAUTION

- Use of controls or adjustments or performance of procedures other than those specified herein hazardous radiation exposure.
- The use of optical instruments with this product will increase eye hazard.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Information to User

Alteration or modifications carried out without appropriate authorization may invalidate the user's right to operate the equipment.

[For Canadian model]
This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.
[Pour le modèle Canadien]
Cet appareil numérique de la Classe B respecte toutes les exigences du Règlement sur le matériel brouileur du Canada.

POWER-CORD CAUTION

Handle the power cord by the plug part. Do not pull out the plug by tugging the cord, and never touch the power cord when your hands are wet, as this could cause a short circuit or electric shock. Do not place the unit, a piece of furniture, or other object on the power cord or pinch the cord in any other way. Never make a knot in the cord or tie it with other cords. The power cords should be routed so that they are not likely to be stepped on. A damaged power cord can cause a fire or give you an electric shock. Check the power cord once in a while. When you find it damaged, ask your nearest PIONEER authorized service center or your dealer for a replacement.

FEATURES

This unit can be used to record CD-R (CD recordable) discs or CD-RW (CD rewritable) discs.
Once recorded, a CD-R disc cannot be erased. However, a recorded CD-RW disc can be erased later.
Both CD-R and CD-RW discs provide the high sound quality and excellent durability that is the hall mark of ordinary prerecorded CDs (compact discs).

☐ Playback of CD-R, CD-RW and CD discs

This recorder can be used to play partially recorded CD-R or CD-RW discs, finalized CD-R or CD-RW discs and ordinary prerecorded CD discs.

☐ Creation of CD-compatible discs

A CD-R disc can be played on any CD player just like ordinary prerecorded CD discs provided it has been finalized (by recording TOC) after recording.
CD-RW discs can only be played back on a player specially designed to handle CD-RW discs.

☐ Sampling frequency converter

When recording a digital source using 32 kHz or 48 kHz sampling frequency such as satellite broadcasting, DAT and DCC, this unit automatically converts the sampling frequency into 44.1 kHz which is the sampling frequency used with the CD.
However, the digital monitoring signal which is output during recording with this unit is based on the same sampling frequency as the recorded source.

☐ Digital-source synchro recording modes

When recording digital signals from a CD, DAT, MD or DCC, the recording on this unit can be started and stopped in synchronism with the starting and stopping of the playback of the source component.
A mode for synchro recording of a single track from the above-mentioned sources is available so that edited recording is easy.

☐ Build-in Multi-Level $\Delta\Sigma$ (Delta-Sigma) DAC

The multi-level Digital-Analog Converter achieves superior resolution compared to the conventional Delta-Sigma DAC, thus producing high conversion accuracy even when jitter is present in the system clock.

☐ 1-bit A/D converter

The A/D converter (analog-to-digital converter) of this unit uses the latest 1-bit conversion system. This system provides the following advantages compared to previous systems.

- Zero-cross distortion does not occur from the principle.
- Non-linear distortion does not occur throughout the frequency band.
- High accuracy is possible without adjustment.

These advantages preserve the original quality of the music including low-level signals.

☐ Newly-developed 3-beam differential push-pull pickup

The newly developed 3-beam pickup with differential push-pull system stabilizes operations and reproduces rich medium and low frequencies.

☐ Direct construction with minimized signal path and separated digital and audio

The direct construction reduces cross-interference between signals by achieving a correct signal transfer. It reproduces musical signals with high purity by thoroughly improving the distortion, channel separation and level linearity values. These improvements are not in terms of values at a single point but applied over a wide frequency range.

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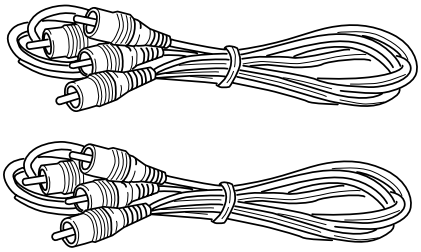
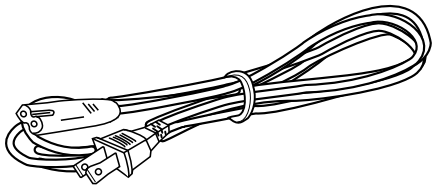
CHECKING ACCESSORIES

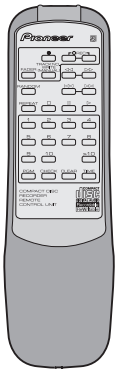
Audio cables ... x 2
(analog recording, analog playback output)



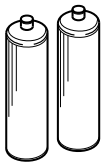
AC power cord



Remote control unit

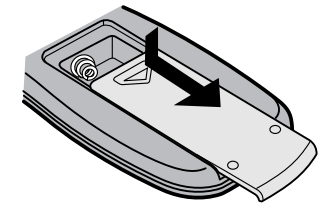


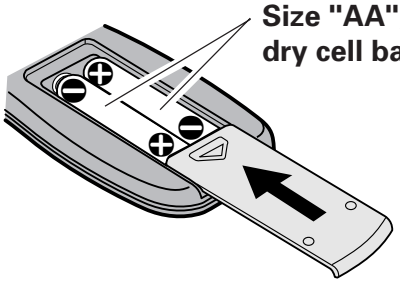
Operating instructions
(this booklet)



Size "AA"/R6 dry cell batteries ... x 2

Loading batteries in to the remote control unit





Size "AA"/R6
dry cell batteries

⚠CAUTIONS

Incorrect use of batteries may result in such hazards as leakage and bursting. Observe the following precautions.

- Never use new and old batteries together.
- Insert the plus and minus sides of the batteries properly according to the marks in the battery compartment.
- Batteries with the same shape may have different voltages. Do not use different batteries together.

CAUTIONS REGARDING HANDLING

Location

Install the compact disc recorder in a well-ventilated location where it will not be exposed to high temperatures or humidity.
Do not install the compact disc recorder in a location which is exposed to direct rays of the sun, or near stoves or radiators. Excessive heat can adversely affect the cabinet and internal components. Installation of the player in a damp or dusty environment may also result in a malfunction or accident. (Avoid installation near cookers etc., where the player may be exposed to oily smoke, steam or heat.)
Do not install the compact disc recorder on an unstable or inclined surface.

Precautions regarding installation

- Placing and using the compact disc recorder for long periods on heat-generating sources such as amplifiers will affect performance. Avoid placing the compact disc recorder on heat-generating sources.
- Install this compact disc recorder as far as possible from tuners and TV sets. A compact disc recorder installed in close proximity to such equipment may cause noise or degradation of the picture.
- Such noise may be particularly noticeable when an indoor antenna is used. In such cases, make use of an outdoor antenna, or turn off power to the compact disc recorder.
- Please place this unit on a level surface.

Cleaning the compact disc recorder

To clean the compact disc recorder, wipe with a soft, dry cloth. For stubborn dirt, wet a soft cloth with a mild detergent solution made by diluting one part detergent to 5 or 6 parts water, wring well, then wipe off the dirt. Also use a dry cloth to wipe the surface dry. Do not use volatile liquids such as benzene and thinner which are harmful to the unit.

Never move the unit during recording/playback

The disc rotates at a high speed during recording and playback. Do not lift or move the unit during these operations, otherwise the disc may be damaged or recording is impossible.

CD lens cleaner

The compact disc recorder's pickup lens should not become dirty in normal use, but if for some reason it should malfunction due to soiling, consult your nearest PIONEER authorized service center. Lens cleaners for compact disc recorders are commercially available, but special care should be exercised in their use since some may cause damage to the lens.

Condensation

When this unit is brought into a warm room from previously cold surroundings or when the room temperature rises sharply, condensation may form inside, and the unit may not be able to attain its full performance. If this occurs, allow the unit to stand for about an hour or raise the room temperature gradually.

Discs usable with this unit

- **CD-R and CD-RW discs**

■ When recording signals on a CD-R disc or a CD-RW disc with this unit, be sure to use the disc carrying the following mark and indication (disc for consumer use).

COMPACT disc DIGITAL AUDIO Recordable *1 or COMPACT disc DIGITAL AUDIO ReWritable *2

FOR CONSUMER or FOR CONSUMER USE

Recording is not possible on a disc without the above mark (disc for professional use).
In countries where the copyright fee collection system has been established based on the respective copyright laws, the copyright fee for discs carrying the CD-R mark*1 or the CD-RW mark*2 and "FOR CONSUMER" or "FOR CONSUMER USE" indication has already been paid to the copyright owner as defined in the copyright law, so that the user can record music on such discs for personal use. However, if you want to use a disc for other purpose than personal use, you need to obtain permission from the copyright owner. Also note that the copyright laws are variable depending on the countries; be sure to follow the copyright-related law in your country.

The CD-R discs are commercially available from PIONEER.
RDD-60A (5.25 in/12 cm, 60 min.)
RDD-74A (5.25 in/12 cm, 74 min.)
RDD-74B (5.25 in/12 cm, 74 min.)(Soon-to-be marketed)

- **CD disc**

■ The CD disc used with this unit should be a disc carrying the following mark (Compact Disc - digital audio with optical recording).

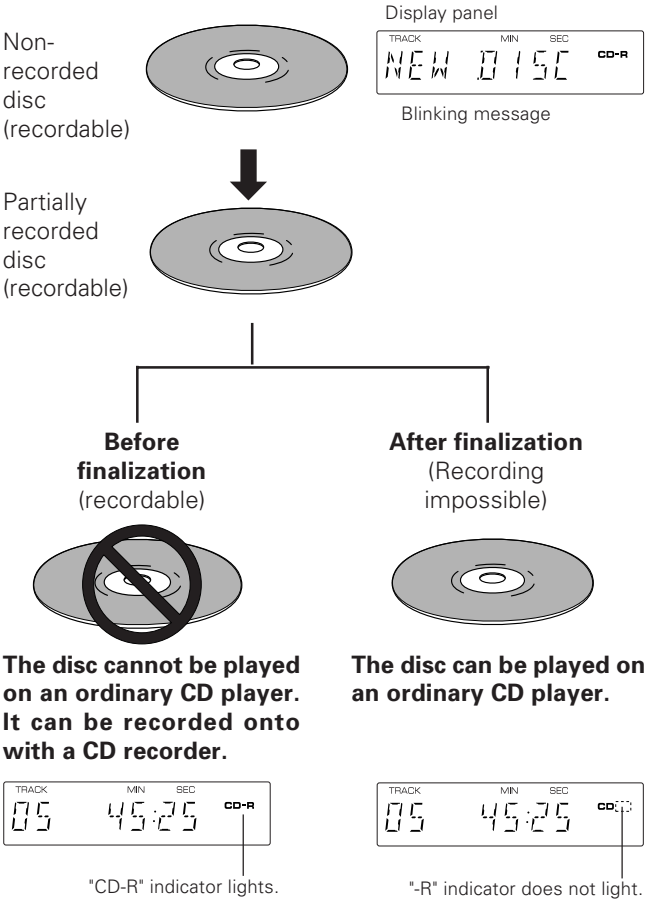
COMPACT disc DIGITAL AUDIO

Notes on the copyright

- Broadcast programs, records, other recording media (music tapes, cassettes, CD discs, etc.) and musical performance are protected by the copyright law in your country just like the verse and melody of musical pieces.
- Therefore, the copyright law dictates that permission should be obtained from the copyright owner if you sell, transfer, distribute or lease a disc recorded from the above mentioned sources or if you use it in business (including background music in your store).

CD-R finalization

If it is desired to play a recorded CD-R disc on an ordinary CD player, the disc should be subjected to processing called finalization.



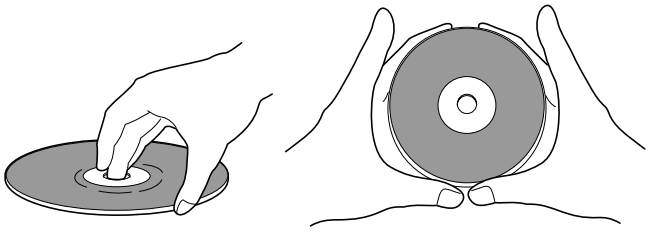
CAUTION
After finalization;
- additional recording is impossible.
- setting or clearing of skip IDs is impossible. (Refer to p. 30 of the Operating Instructions.)

CD-RW

A finalized CD-RW disc cannot be played back on a standard CD player. A CD-RW disc player is required to play back such discs.
Recordings made on a CD-RW discs can be erased when they have been finalized (see page 31 for information on how to erase recordings). New recordings can be made after erasure.

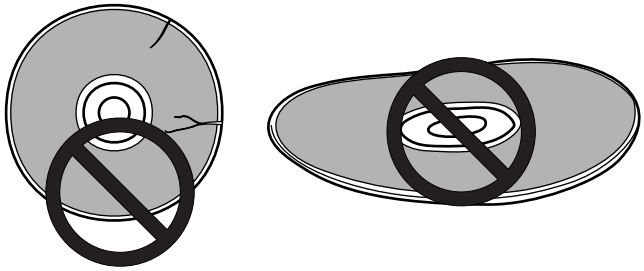
Handling of disc

■ When holding a CD-R, CD-RW or CD disc, be careful not to leave a fingerprint, dirt or a scratch on the signal-recording side. Hold the disc by placing your fingers on the edge or across the center hole and edge. A disc containing a fingerprint, dirt or a scratch can sometimes become unusable for recording or playback.



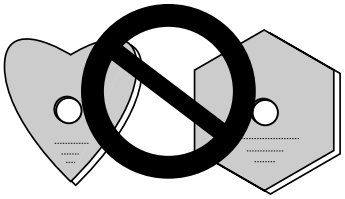
■ Be careful not to scratch the label side. A scratched disc can sometimes become unusable for recording or playback.

■ The disc rotates at a high speed inside the player. Do not attempt to use an abnormal disc (cracked disc, extremely warped disc, etc.).



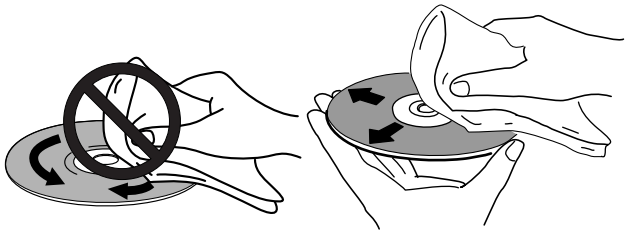
■ Do not play a CD with a special shape

● Do not play a CD having other shape than a circular disc, such as a heart shaped disc. Otherwise malfunction may occur.



■ Disc maintenance

● When a disc is stained with a fingerprint or dust, the signal recorded on the disc itself is not affected but such a stain could degrade the sound quality by reducing the brightness of the light reflected from the signal recording side. Therefore, always try to keep the disc surface clean. For cleaning, use a soft cloth which is either dry or soaked in alcohol and wipe with a light force in straight directions from the center toward the edge.



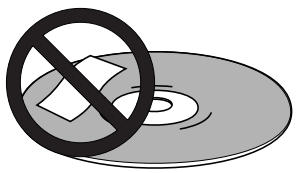
Do not wipe in a circular direction.

Wipe lightly from the center toward the edge.

● For disc cleaning, it is recommended to use an optional disc cleaning kit.
● Do not use record spray or anti-static agent. Also take care that volatile chemicals such as benzine and thinner do not spill on the disc, for these substances may corrode the surface.

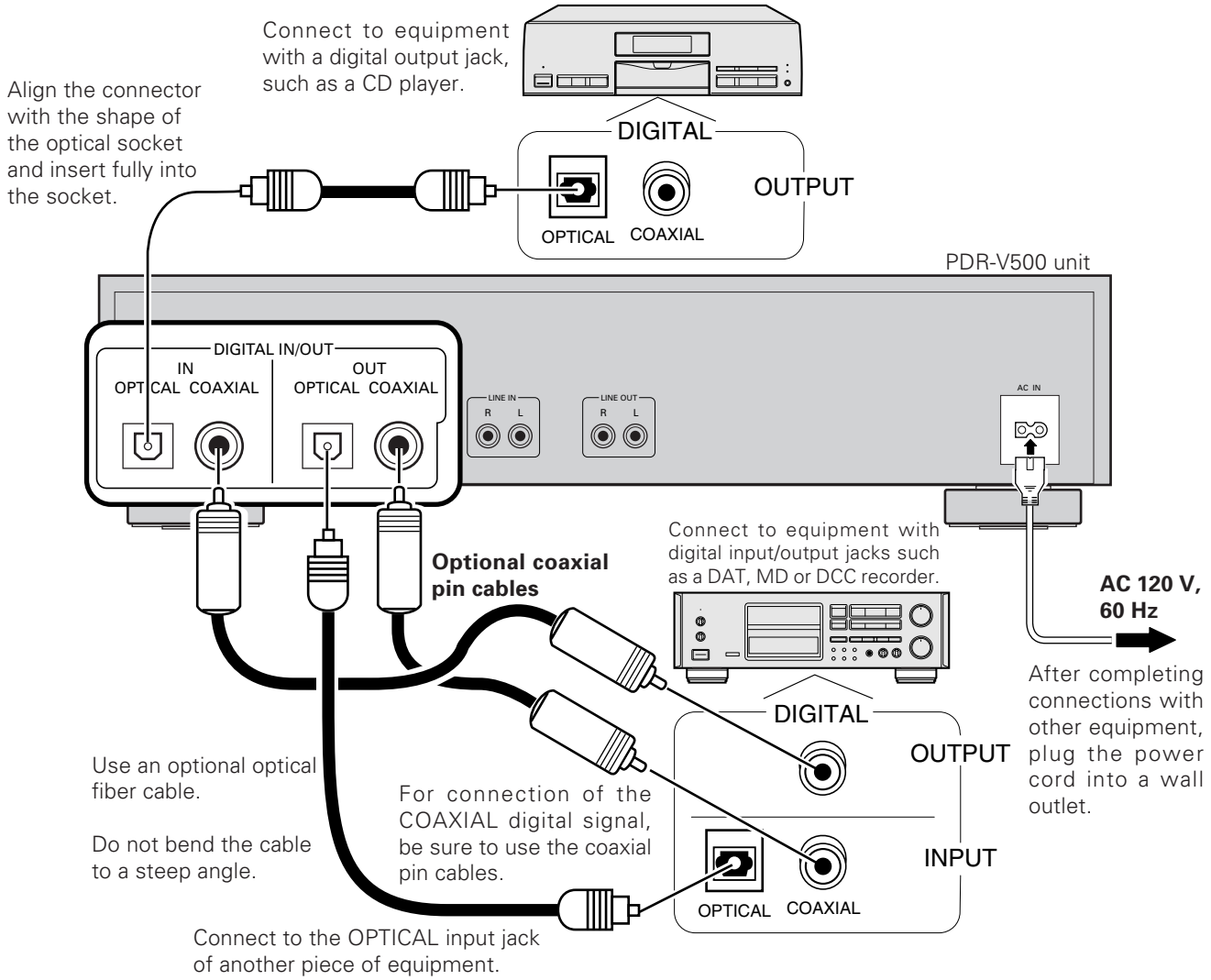
■ Disc storage

● The CD-R, CD-RW and CD discs are made of plastic material just like analog record so. When storing a disc, take care so that it does not warp. Always put it in its case and stand the case upright and avoid places subject to direct sunlight, high temperatures, high humidity and extremely low temperatures. It is not recommended to leave the case on a car seat because the seat of a car in direct sunlight can become unbelievably hot.
● Be sure to read the instructions provided with the disc.
● Do not stick paper or seals on the label surface.
Make sure the label surface is not scratched or damaged. Scratched or damaged surfaces may result in playback or recording failure.
Use only a felt pen sold on the market or similar pen to write on the label. Never use a writing instrument with a hard point (ballpoint pen, pencil, etc.), as this will damage the disc.



DIGITAL SIGNAL CONNECTION

Before making or changing the connections, switch off the power switch and disconnect the power cord from the AC outlet.


Connect to equipment with a digital output jack, such as a CD player.
Align the connector with the shape of the optical socket and insert fully into the socket.
DIGITAL
OUTPUT
OPTICAL
COAXIAL
PDR-V500 unit
DIGITAL IN/OUT
IN
OPTICAL COAXIAL
OUT
OPTICAL COAXIAL
LINE IN
R L
LINE OUT
R L
AC IN
Optional coaxial pin cables
Connect to equipment with digital input/output jacks such as a DAT, MD or DCC recorder.
AC 120 V, 60 Hz
After completing connections with other equipment, plug the power cord into a wall outlet.
DIGITAL
OUTPUT
INPUT
OPTICAL
COAXIAL
Use an optional optical fiber cable.
Do not bend the cable to a steep angle.
For connection of the COAXIAL digital signal, be sure to use the coaxial pin cables.
Connect to the OPTICAL input jack of another piece of equipment.

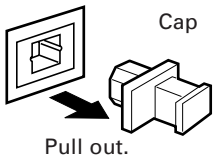
CAUTION
Do not attempt to connect several units of the PDR-V500 in a series.

■ Caution in use of optical fiber cables

- Do not bend an optical fiber cable to a steep angle, for this could damage the cable. Be specially careful when mounting the unit in a rack, etc. When an optical cable is stored in the form of a loop, the loop should have a diameter larger than 15 cm (6 in.).
- An optical cable should be inserted deep into the socket. Avoid incomplete connection.
- Use optical cables with a length of no more than 3 m (10 feet).
- Be careful not to leave dust on or scratch the optical fiber cable plugs. If the plug is dusty, wipe with a soft cloth before connection.
- When the optical fiber cables are not connected, protect the OPTICAL sockets on the rear of the unit against dust by inserting dust protective caps into them.

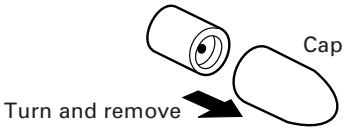
Optical sockets are delicate!!

- When the OPTICAL sockets are used, pull out the dust protective caps from them. Be sure to insert them again when the OPTICAL sockets are not to be used.
- Retain the dust protective caps carefully.



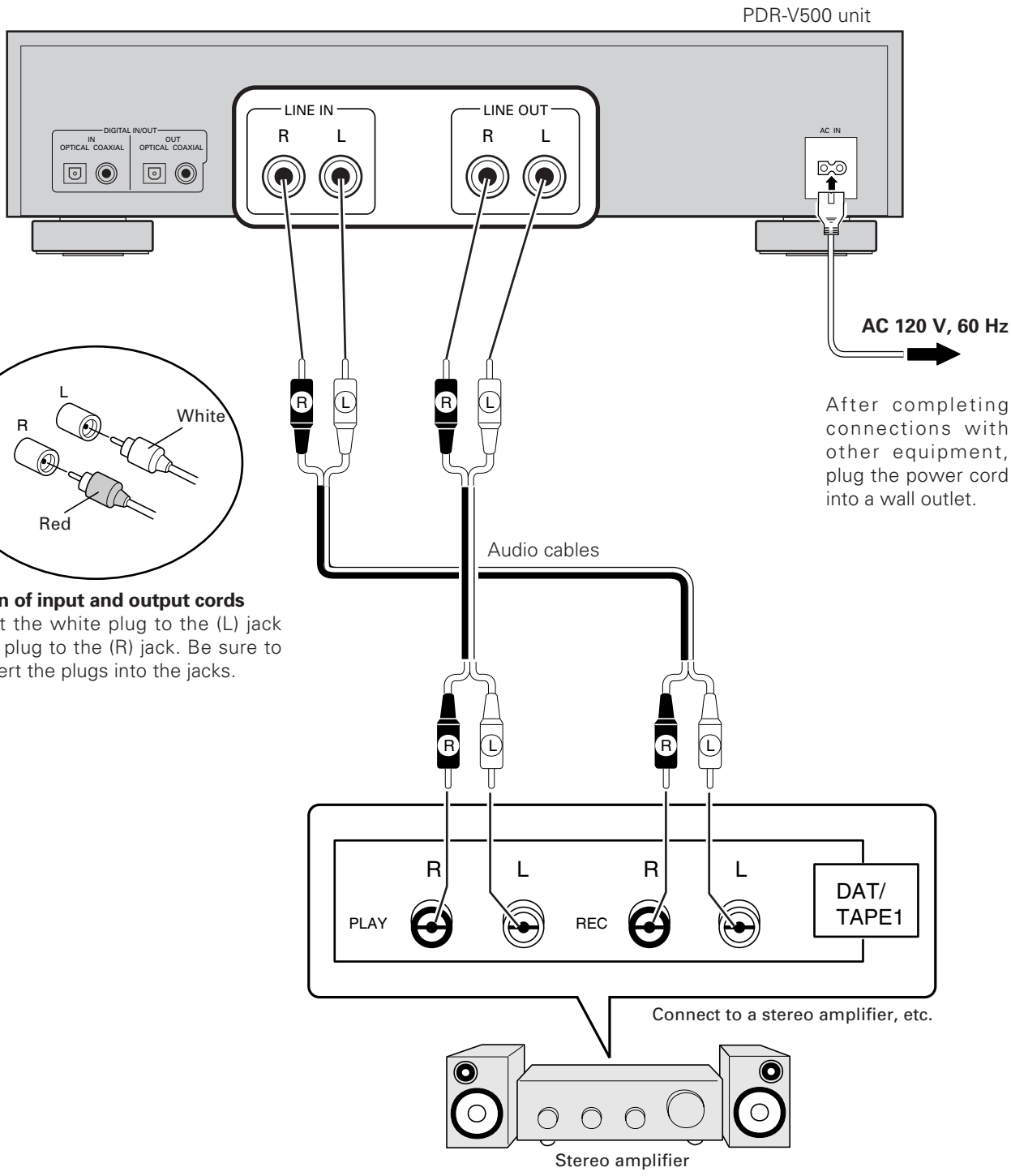
■ Digital input/output (coaxial) terminal cap

- Remove the black cap before using the digital input/output terminal.
- Be sure to replace the black cap when not using the terminal.



ANALOG SIGNAL CONNECTION

(Before connecting this unit with other equipment, unplug the power cord from the wall outlet.)



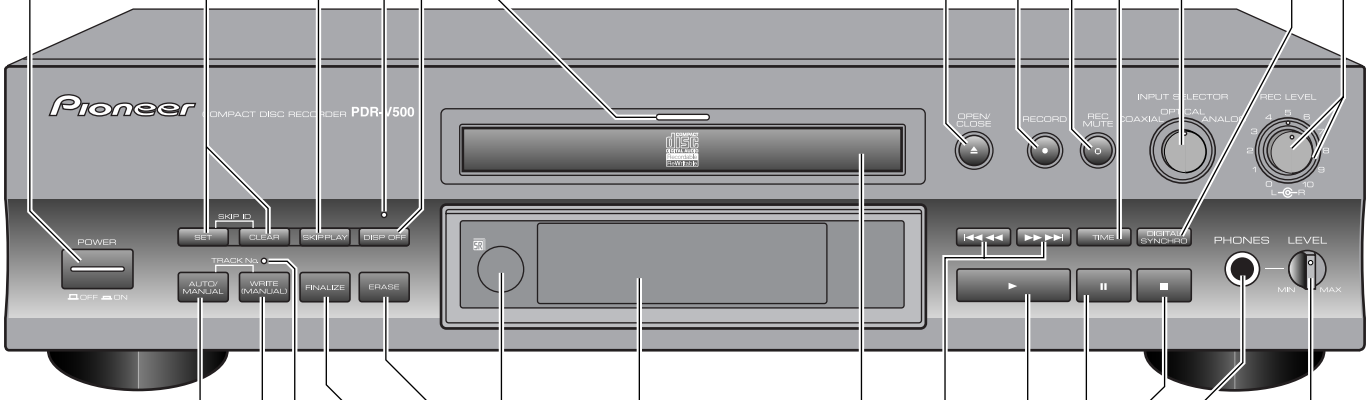
Connection of input and output cords

- Connect the white plug to the (L) jack and red plug to the (R) jack. Be sure to fully insert the plugs into the jacks.

CONTROLS AND INDICATORS

FRONT PANEL

The operations available using buttons marked "*" are also available using the buttons with the same names or inscriptions on the remote control unit (See p.14).



POWER switch

Function indicator
Recording ... Lights in red
Recording mute ... Blinks in red
Playback ... Lights in green
Erasing ... Lights in orange

REC LEVEL knobs (outer: L ch, inner: R ch) (See p.23)

DIGITAL SYNCHRO button (See p.18 – p.20)

DISP(Display) OFF button (See p.34)

INPUT SELECTOR knob (See p.16)

DISP(Display) OFF indicator (See p.34)

***TIME button (See p.13)**

SKIP PLAY button (See p.38)

***REC MUTE button (○)(See p.26)**

***RECORD button (●)(See p.21, p.22)**

SKIP ID SET, CLEAR buttons (See p.28, p.29)

OPEN/CLOSE button (⏏)

Disc tray

TRACK No. AUTO/MANUAL button (See p.25)

Display panel (See p.13)

Headphones level control (PHONES LEVEL)

***Track/*Manual search buttons (|◄◄ ◄◄, ►► ►►|)(See p.34)**

***TRACK No. WRITE (MANUAL) button (See p.25)**

Remote control sensor (See p.14)

Headphones jack (PHONES)

TRACK No. WRITE (MANUAL) indicator (See p.25)
Lights when the track number manual writing is possible.

ERASE button (See p.31, p.32)

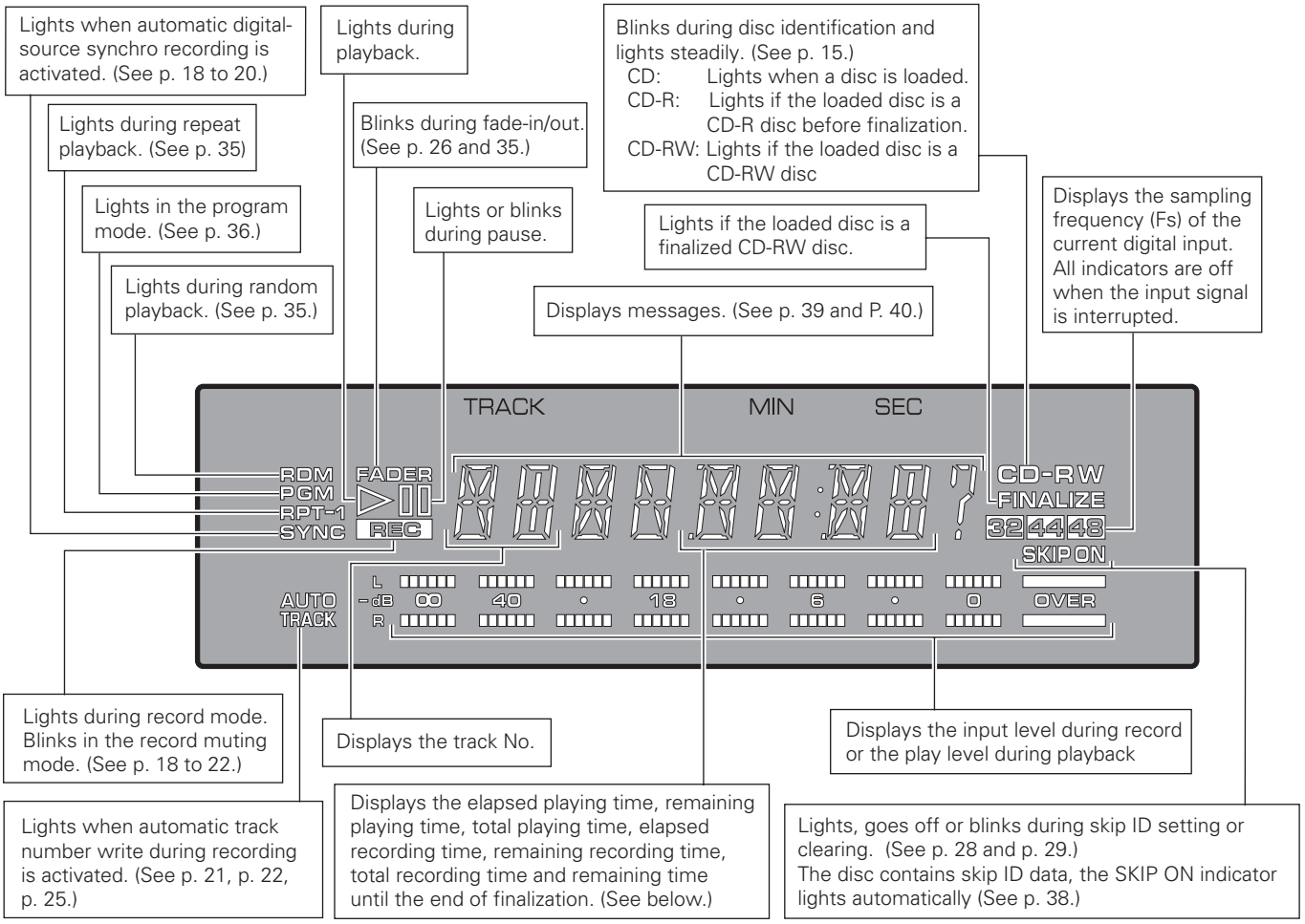
***Stop button(■) (See p.18–p.22, p.33)**

FINALIZE button (See p.30)

***Play button (►) (See p.33)**

***Pause button(II) (See p.26, p.33)**

DISPLAY PANEL


Lights when automatic digital-source synchro recording is activated. (See p. 18 to 20.)
Lights during playback.
Blinks during disc identification and lights steadily. (See p. 15.)
CD: Lights when a disc is loaded.
CD-R: Lights if the loaded disc is a CD-R disc before finalization.
CD-RW: Lights if the loaded disc is a CD-RW disc
Lights during repeat playback. (See p. 35)
Blinks during fade-in/out. (See p. 26 and 35.)
Lights in the program mode. (See p. 36.)
Lights or blinks during pause.
Lights if the loaded disc is a finalized CD-RW disc.
Displays the sampling frequency (Fs) of the current digital input. All indicators are off when the input signal is interrupted.
Lights during random playback. (See p. 35.)
Displays messages. (See p. 39 and P. 40.)
TRACK
MIN
SEC
RDM
PGM
RPT-1
SYNC
FADER
REC
CD-RW
FINALIZE
32 44 48
SKIP ON
AUTO TRACK
L
dB
R
00
40
18
6
0
OVER
Lights during record mode. Blinks in the record muting mode. (See p. 18 to 22.)
Displays the track No.
Displays the input level during record or the play level during playback
Lights when automatic track number write during recording is activated. (See p. 21, p. 22, p. 25.)
Displays the elapsed playing time, remaining playing time, total playing time, elapsed recording time, remaining recording time, total recording time and remaining time until the end of finalization. (See below.)
Lights, goes off or blinks during skip ID setting or clearing. (See p. 28 and p. 29.)
The disc contains skip ID data, the SKIP ON indicator lights automatically (See p. 38.)

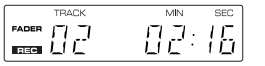
Switching the time display

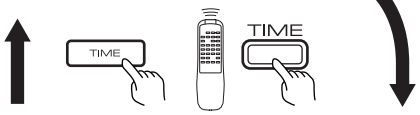
The following operation allows you to check the recording time information during recording or playing time information during playback. Every time the TIME button is pressed, the time information contents are switched in order of Ⓐ → Ⓑ → Ⓒ → Ⓓ.

The display mode varies depending on whether the current operation is recording or playing back (in order of Ⓐ → Ⓑ → Ⓒ during recording).

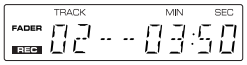
During recording

Ⓐ : Elapsed recording time (2 min. 16 sec. after the start of track No. 2)

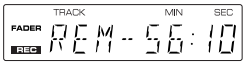




Ⓒ : Total recording time (3 min. 50 sec. of 2-track recording)

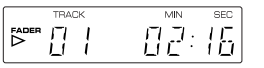


Ⓑ : Remaining recording time (56 min. 10 sec. remaining on the disc)

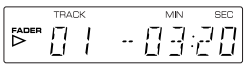


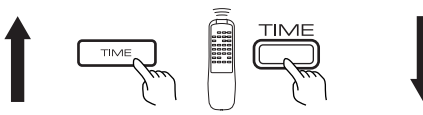
During playback

Ⓐ : Elapsed playing time (2 min. 16 sec. after the start of track No. 1)

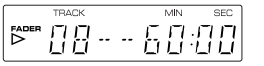


Ⓑ : Remaining playing time of track being played (3 min. 20 sec. remaining for track No. 1)

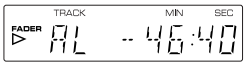




Ⓓ : Total playing time (60 min. 0 sec. for 8 tracks)



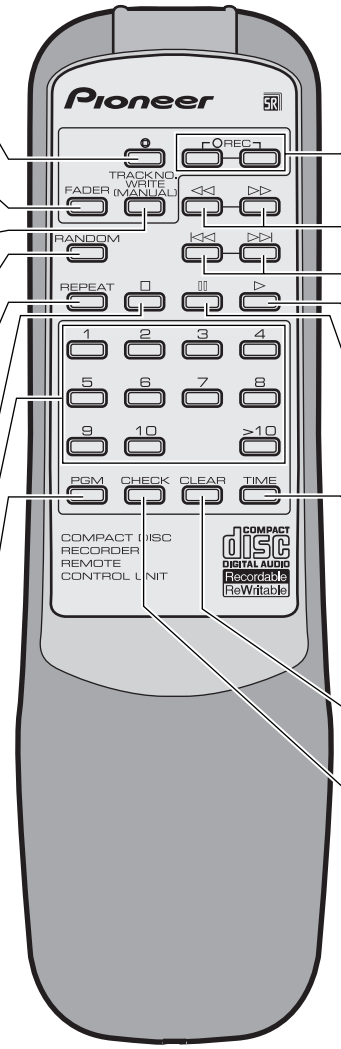
Ⓒ : Remaining playing time of all tracks on disc being played (46 min. 40 sec. remaining on the disc)



CONTROLS AND INDICATORS

REMOTE CONTROL UNIT

Operations performed by buttons marked "*" can also be carried out by using buttons with the same name on the main unit (See p. 12).



***Record muting button (○)(See p.26)**

FADER button (See p.26, 35)

***TRACK No. WRITE (MANUAL) button (See p.25)**

RANDOM button (See p.35)

REPEAT button (See p.35)

***Stop button (■) (See pp.18–22, 33)**

Numeric buttons (1 to 10, >10)

PGM (Program) button (See p.36)

***Record buttons (●REC)**
For recording, press the two buttons simultaneously.
(See p.21, 22.)

***Manual search buttons (◄◄, ►►)(See p.34)**

***Track search buttons (I◄◄, ►►I)(See p.34)**

***Play button (►) (See p.33)**

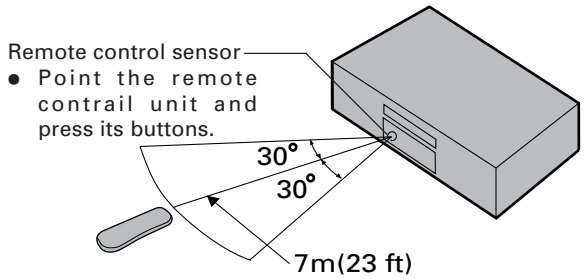
***Pause button (II) (See pp.26, 33)**

***TIME button (See p.13)**

CLEAR button (See p.37)

CHECK button (See p.37)

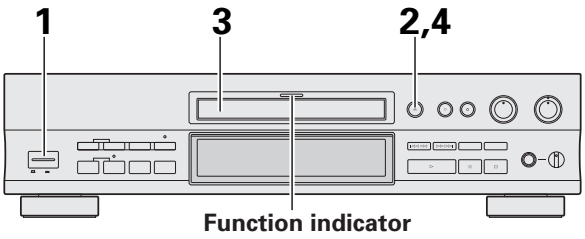
■ Remote controllable range



Caution on the remote control operation

- Remote control may be impossible if there is an obstacle between the remote control unit and main unit or if the remote control unit is operated at too great of an angle from the remote control sensor.
- Erroneous operation may occur if strong light such as direct sunlight or fluorescent lamp light is incident to the remote control sensor.
- The main unit may operate erroneously if it is used near equipment radiating infrared rays or if the infrared remote control unit of other equipment is used near the unit. On the contrary, if this remote control unit is operated near another piece of equipment which can be controlled with infrared rays, the equipment may operate erroneously.
- Replace batteries when the remote controllable range decreases noticeably.

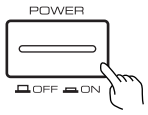
DISC LOADING/UNLOADING



A. OPEN THE DISC TRAY (UNLOADING A DISC)

1 Turn the power on.

- The function indicator will flash green.
- The display panel is illuminated.



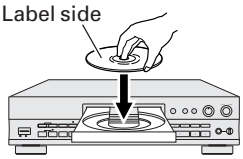
2 Open the disc tray.

"OPEN" is displayed and the tray comes out.

- After recording or skip information recording, it takes a few seconds before the disc can be unloaded because the recording information is written on the disc. "OPEN" blinks in this period.

B. CLOSE THE DISC TRAY (LOADING A DISC)

3 Place a disc.



- Set a disc in the center of the tray with the label side up.
- When loading an 8-cm (3-inch) disc, set the disc in the groove in the very center of the tray.
- Load only one disc at a time.

4 Close the disc tray.

"CLOSE" is displayed and the tray is closed.

The disc tray can also be closed by;
- pressing the **play (►) button**.
- pushing the **disc tray** lightly.

- When a disc is loaded, the disc type is identified and the information on the disc is read out. (In this period, "CD", "CD-R" and "CD-RW" are displayed alternately.)

Display for a non-recorded CD-R disc:	TRACK MIN SEC NEW DISC CD-R	Display for a prerecorded CD or finalized CD-R disc:	TRACK MIN SEC 11 55:37 CD The total playing time is displayed.
Display for a non-recorded CD-RW disc:	TRACK MIN SEC NEW DISC CD-RW	Display for a prerecorded and finalized CD-RW disc:	TRACK MIN SEC 11 55:37 CD-RW FINALIZE The total playing time is displayed.
Display for a partially recorded CD-R disc:	TRACK MIN SEC 10 43:12 CD-R The total recording time is displayed.	An attempt is made to start playback without loading a disc:	TRACK MIN SEC NO DISC
Display for a partially recorded CD-RW disc:	TRACK MIN SEC 10 43:12 CD-RW The total recording time is displayed.		

MODE OF RECORDING

This section introduces the summary of the modes of recording available with this unit.

- **It is recommended to use the automatic digital-source synchro recording when recording a CD, DAT, MD or DCC source. The track numbers are updated automatically by this unit.**

For details, also refer to the corresponding descriptions.

This unit provides four modes of recording on CD-R and CD-RW discs.
Select a mode according to the source recorded.

Automatic digital-source synchro recording (1-track) ..... When the source equipment starts to play, only one track is recorded automatically and the recording stops automatically after that track. This mode is convenient for edited recording of a CD, DAT, MD or DCC. (Refer to page 18 for the recording setup procedure.)

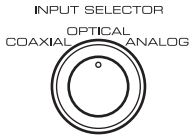
Automatic digital-source synchro recording (all-track) ..... When the source equipment starts to play, all tracks are recorded automatically and the recording stops automatically after the last track. This mode is convenient for recording an entire CD, DAT, MD or DCC. (Refer to page 19 for the recording setup procedure.)

Automatic finalization recording ..... This mode automatically performs finalization after an all-track automatic digital source synchro recording. (Refer to page 20 for the recording setup procedure.)

Manual digital-source recording ..... This mode is mainly used for recording the output from other digital sources than those mentioned above. Recording is started or stopped manually. (Refer to page 21 for the recording setup procedure.)

Analog-source recording ..... This mode is used for recording the line output of the source equipment. (Refer to page 22 for the recording setup procedure.)

To monitor the recording input, set the INPUT SELECTOR to desired input position. Even if the position is the same, it must be changed to a different position and then switched back to monitor the input.



When the input is selected, the input source equipment name is displayed as "INPUT" → "CD" (only from digital input) → "MONI".

- This display is available if the input source is a CD, MD, DAT or DCC.
- Before recording from LaserDisc, make sure that this unit's sampling frequency indicator lights in the display. Digital recording is not possible if this indicator does not light. Check the source with the record monitor.
- When recording from digital sources like CD, CDV, or LD players, the input source display may display "CD."

CAUTION

*1: COMPACT disc DIGITAL AUDIO Recordable *2: COMPACT disc DIGITAL AUDIO ReWritable

This unit is a recorder for writable compact discs.

This recorder can record on discs carrying the CD-R mark*1, the CD-RW mark*2 or the indications "FOR CONSUMER" and "FOR CONSUMER USE." The CD-R indicator lights when a CD-R (Compact Disc - Recordable) is loaded while the CD-RW indicator lights when a CD-RW (Compact Disc - Rewritable) is loaded. Recording on a partially recorded disc starts from the point where the previous recording left off. The CD-R disc is recordable once and cannot be erased once recorded. The CD-RW disc is recordable and can erased and re-recorded again.

In the following cases, recording is impossible even when the RECORD or DIGITAL SYNCHRO button is pressed.

When the CD indicator is lit (CD or finalized CD-R), input monitoring is started by pressing any of the above buttons.
When the CD-RW and FINALIZE indicators are lit (finalized CD-RW), input monitoring is started by pressing any of the above buttons.
When there is no remaining recording time and "REC FULL" is displayed.
When 99 tracks have been recorded and "REC FULL" is displayed. (No more recording is possible.)

When a disc without the CD-R mark *1, the CD-RW mark*2 or the indications "FOR CONSUMER" and "FOR CONSUMER USE" is loaded, "Pro DISC" is displayed and recording is impossible (CD-R or CD-RW disc to be used with equipment other than a CD recorder).
When a CD-R or CD-RW disc is inserted, the unit automatically performs a series of adjustments designed to provide the best possible recording.
It may take some time to complete the automatic adjustments if the unit is cold when the power is turned on. Please wait for the recorder to enter the record standby mode.
Be sure to remove the disc before turning off the power. If the disc is left in the recorder, it may not operate normally next time.

CAUTION:

- Do not play the DAT or DCC of the source player with programmed playback, for this may lead to incorrect writing of the track numbers. If programmed playback should be recorded, record each track separately using the 1-track recording procedure.

■ Recording from the middle of a disc

If a CD-R or CD-RW disc before finalization has some remaining recording time left and the total number of tracks which have been recorded is below 99, recording can be restarted from the position after the last recorded track.

■ Recording of other-than-audio signals

This unit is designed exclusively for recording audio signals. Non-audio signals such as the CD-ROM play signal cannot be recorded. Recording is possible only when the input digital signal is an audio signal. Even when a digital signal contains a graphic or character information signal, for example the CD graphics play signal is input, the graphic or character information is not recorded.

Precautions regarding power interruptions during recording or while the display shows "PMA REC."

Never turn the power supply off during recording.
Be always sure to remove the disc before turning the power of the unit off.
In case the power supply is interrupted due to power failure or unplugging of the power cord by mistake during recording;
the last part of the recording will not be possible.
In this case, "RESUME" is displayed until recording is possible again.

Caution in case the digital input is interrupted during recording

In case the sampling frequency from the digital signal of DAT, DCC or satellite broadcasting is switched during recording, the digital input is interrupted but recording is continued. A non-recorded blank is recorded in this period.
In case the satellite broadcasting signal is interrupted, the digital signal line is disconnected or the power supply of the source player is cut off and if the digital signal is recovered in less than about 5 seconds, recording is continued while recording a non-recorded blank in this period. If the digital signal is not recovered in 5 seconds or more, recording is interrupted and "CAN NOT" and "REC" are displayed; recording restarts when the digital audio signal is input after the recovery of the digital signal.

Cautions when making digital recordings from DAT

Be sure to enter the start IDs in DAT tapes in positions located before the start of sound.
Tapes that are recorded using the DAT auto ID function records the start ID slightly after the beginning of the actual recording. This recorder uses the start ID to sense the transition between tracks in a digital recording from DAT tape.

Thus the following problems could occur when automatic updating of track numbers is used during automatic digital-source synchro recording or manual digital-source recording.

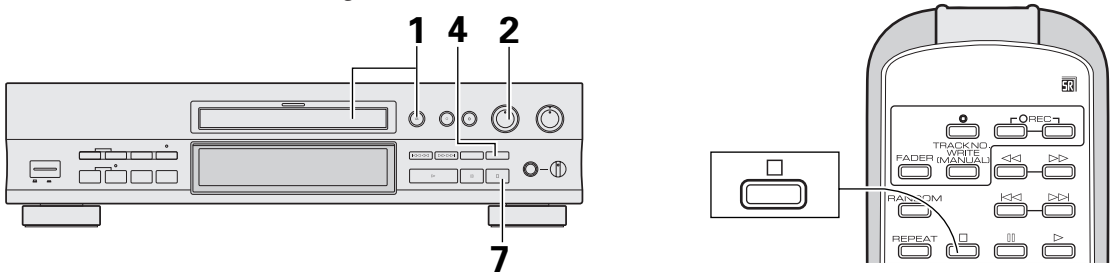
The beginning of a track is not recorded.
A new track number is created slightly after the beginning of a new track.
The beginning of the next track is recorded at the end of a recording.

Manual recording of the DAT tape start ID is therefore recommended to avoid these problems.
For information on DAT operations, refer to the operating instructions provided with the DAT recorder.

AUTOMATIC DIGITAL-SOURCE SYNCHRO RECORDING

A. 1-track recording

When the source equipment starts to play, only one track is recorded automatically and the recording stops automatically after that track. This mode is convenient for edited recording of a CD, DAT, MD or DCC.



- After loading the disc, check that the CD-R or CD-RW indicator stops blinking and starts to light steadily.
  In case it does not light steadily or a character display (such as "Pro DISC") appears, refer to page 40.

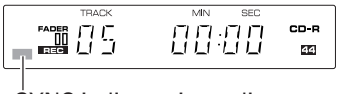
- The ANALOG input cannot be recorded with this function.

- Confirm the track to be recorded before recording.

- Every time the **DIGITAL SYNCHRO button** is pressed, the mode is changed in order of 1-SYNC → AL-SYNC → Record-pause mode.
  Select "**1-SYNC**" when 1-track recording is required.

- Do not start the playback of the source player until the SYNC indicator starts to blink.

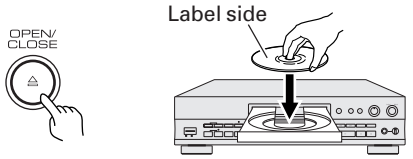
- If the SYNC indicator is not lit after 1-track synchro recording, the track to be recorded next can be confirmed on the source player. (Automatic recording cannot be started while the SYNC indicator is not lit.)



SYNC indicator is not lit.

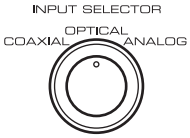
1 Load a CD-R or CD-RW disc containing a recordable space.

For a disc loading, refer to p.15.



2 Set the INPUT SELECTOR to OPTICAL or COAXIAL.

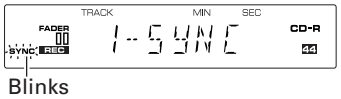
Select the digital input to be recorded.



3 Ensure that the source player is not playing (in stop or pause mode). (This function cannot be activated if the source is being played.)

4 Press the DIGITAL SYNCHRO button.

- Wait until the SYNC indicator blinks.



Blinks

5 Start playing the source player.

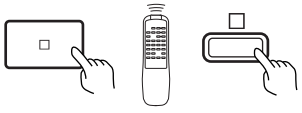
- This unit starts recording automatically.
- When the SYNC indicator is flashing (1-track synchro recording standby), or during 1-track synchro recording, if the input signal is interrupted or the source is switched to a source for which auto synchro recording is not possible, the 1-track synchro recording mode will be canceled and the unit will enter the record-pause mode.

6 If the track changes (when input source is CD or Mini Disc), or if the next start ID is detected (when input source is DAT or DCC), 1-track recording will be canceled and the unit will enter the record-pause mode. The 1-track recording mode is also canceled if no sound is encountered for a period of about five seconds.

- If it is required to record another track after 1-track recording, repeat steps 3 to 5 again.

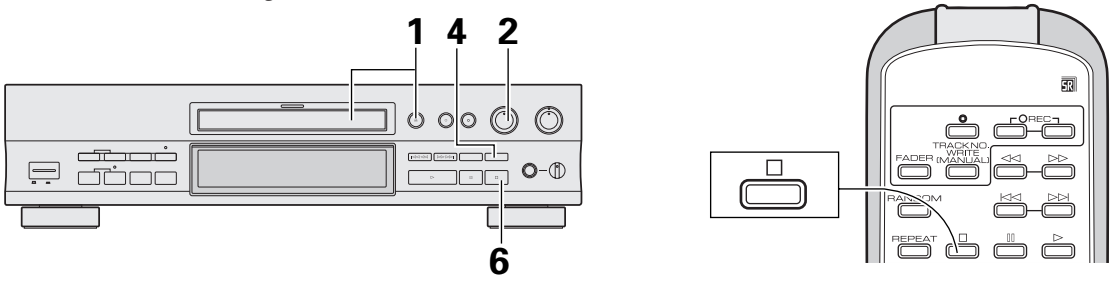
7 After recording, press the stop (■) button to end recording.

- "PMA REC" is displayed and the unit stops after recording the track data.



B. All-track recording

When the source equipment starts to play, all tracks are recorded automatically and the recording stops automatically after the last track. This mode is convenient for recording an entire CD, DAT, MD or DCC.



- After loading the disc, check that the CD-R or CD-RW indicator stops blinking and starts to light steadily.
  In case it does not light steadily or a character display (such as "Pro DISC") appears, refer to page 40.

- The ANALOG input cannot be recorded with this function.

- Confirm the track to be recorded before recording.

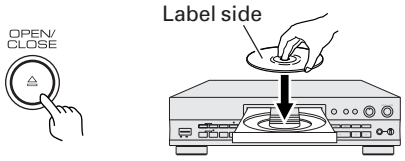
- Every time the **DIGITAL SYNCHRO button** is pressed, the mode is changed in order of 1-SYNC → AL-SYNC → Record-pause mode.
  Select "**AL-SYNC**" when all-track recording is required.

- Do not start the playback of the source player until the SYNC indicator starts to blink.

- The source unit stops playback and after no sound is encountered for about five seconds, the unit reverts to the status noted in step 4 and "**AL-SYNC**" is displayed again. Be careful not to restart playback of the source player under this condition, for this will start the recording again.

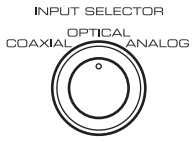
1 Load a CD-R or CD-RW disc containing a recordable space.

For a disc loading, refer to p.15.



2 Set the INPUT SELECTOR to OPTICAL or COAXIAL.

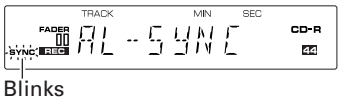
Select the digital input to be recorded.



3 Ensure that the source player is not playing (in stop or pause mode). (This function cannot be activated if the source is being played.)

4 Press the DIGITAL SYNCHRO button twice.

- Wait until the SYNC indicator blinks.

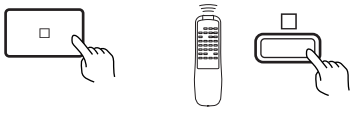


5 Start playing the source player.

- This unit starts recording automatically.
- When the SYNC indicator is flashing (all-track synchro recording standby), or during all-track synchro recording, if the input signal is interrupted or the source is switched to a source for which auto synchro recording is not possible, the all-track synchro recording mode will be canceled and the unit will enter the record-pause mode.

6 After recording, press the stop (■) button to end recording.

- "PMA REC" is displayed and the unit stops after recording the track data.



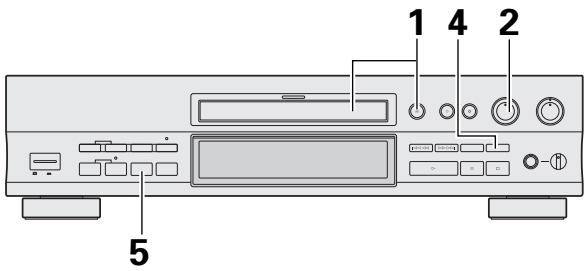
CAUTION

- Do not play the DAT or DCC of the source player with programmed playback, for this may lead to incorrect writing of the track numbers. If programmed playback should be recorded, record each track separately using the 1-track recording procedure.
- The track number is renewed when a start ID is detected during all-track synchro recording from DAT or DCC.
- When performing all-track synchro recording from a CD or Mini Disc player using normal playback, the track number is renewed just as the track changes on the playback side. When the CD or Mini Disc player is in the programmed playback mode, however, the track number is not renewed until the first sound is encountered after the track changes.

AUTOMATIC DIGITAL-SOURCE SYNCHRO RECORDING

C. Automatic finalization recording

This operation automatically performs finalization after an all-track recording. Finalization is the final process in recording a CD-R or CD-RW disc that is playable on standard CD players. (However, CD-RW discs, whether finalized or not, can only be played back on a CD-RW disc player.) See page 30 for details.



- After loading the disc, check that the CD-R or CD-RW indicator stops blinking and starts to light steadily.
  In case it does not light steadily or a character display (such as "Pro DISC") appears, refer to page 40.

- The ANALOG input cannot be recorded with this function.

- Confirm the track to be recorded before recording.

- Every time the **DIGITAL SYNCHRO button** is pressed, the mode is changed in order of 1-SYNC → AL-SYNC → Record-pause mode.
  Select "**AL-SYNC**" when all-track recording is required.
- Press the FINALIZE button once again so that the FINALIZE indicator goes out; the Automatic Finalization will not occur (mode will revert to All-track synchro).

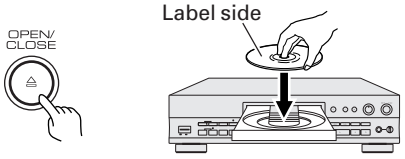
- Do not start the playback of the source player until the SYNC indicator starts to blink.

- The source unit stops playback and after no sound is encountered for about five seconds, the unit reverts to the status noted in step 5 and "**AL-SYNC**" is displayed again. Be careful not to restart playback of the source player under this condition, for this will start the recording again.

- Never turn off the power during finalization!

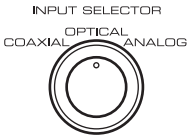
1 Load a CD-R or CD-RW disc containing a recordable space.

For a disc loading, refer to p.15.



2 Set the INPUT SELECTOR to OPTICAL or COAXIAL.

Select the digital input to be recorded.



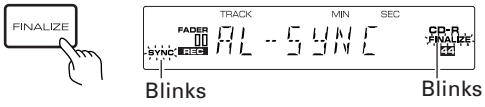
3 Ensure that the source player is not playing (in stop or pause mode). (This function cannot be activated if the source is being played.)

4 Press the DIGITAL SYNCHRO button twice.

- Wait until the SYNC indicator blinks.

5 Press the FINALIZE button.

- The FINALIZE indicator blinks.



6 When playback of the source is started, the All-track synchro recording starts.

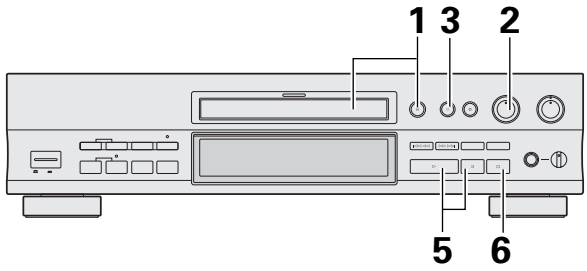
- When the SYNC indicator is flashing (all-track synchro recording standby), or during all-track synchro recording, if the input signal is interrupted or the source is switched to a source for which auto synchro recording is not possible, the all-track synchro recording mode will be canceled and the unit will enter the record-pause mode.

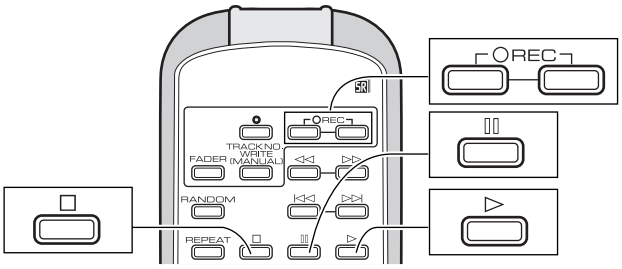
7 When the source playback standby continues for more than 1 minute during an ALL-TRACK SYNCHRO RECORDING, the recorder assumes that the recording has stopped and finalization starts automatically.

- It usually takes about 4 minutes until the finalization completes.
- See page 30 for details.
- **The finalize-standby mode can be canceled by pressing the stop (■) button or FINALIZE button while the unit is in the finalize-standby mode.**
- Operating buttons do not respond when finalization has begun.
- Operation stops automatically without performing finalization when no more recording time remains or when there are 99 or more tracks.

MANUAL DIGITAL-SOURCE RECORDING

This function is for recording of digital output of other digital source than CD, DAT, MD and DCC.
(It is recommended to use the automatic digital-source synchro recording when recording signals from a CD, DAT, MD or DCC.)

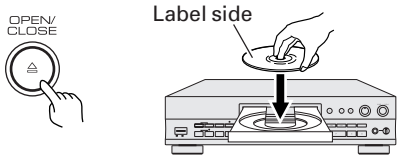




- After loading the disc, check that the CD-R or CD-RW indicator stops blinking and starts to light steadily.
  In case it does not light steadily or a character display (such as "Pro DISC") appears, refer to page 40.

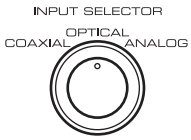
1 Load a CD-R or CD-RW disc containing a recordable space.

For a disc loading, refer to p.15.



2 Set the INPUT SELECTOR to OPTICAL or COAXIAL.

Select the digital input to be recorded.



- Track numbers are automatically updated when the AUTO TRACK indicator is on. In recordings of CD, MD, DAT, DCC and other digital sources, track numbers are automatically updated based on the digital signal information. Digital media such as BS (satellite broadcasting) that contains no track number information are recorded in the same way as analog media i.e. a 2 seconds or longer passage is assumed to be a pause between tracks. Therefore recordings of classical music and other music styles with long silent passages will be recorded on more tracks than required. Turn off the auto track function and create new tracks manually to avoid this problem. (See page 25.)

3 Press the RECORD (REC●) button(s).

This unit enters record-pause mode.

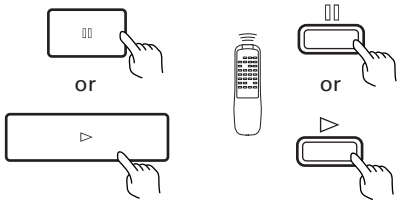
4 Start playing the source player to confirm whether recording of that source is possible.

- In case digital input is not input, "CAN NOT" "REC" is displayed and recording does not start.
  In case a record inhibit signal as defined by SCMS is detected, "CAN NOT" "COPY" is displayed and recording does not start.
  (Refer to pages 24 and 40.)

- Press the PAUSE (II) or PLAY (►) buttons after the counter displays "00:00".

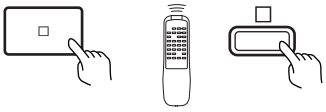
5 Press the pause (II) or play (►) button in record-pause mode.

- This unit starts recording.
- Start playback of the source player after having started the recording of this unit.



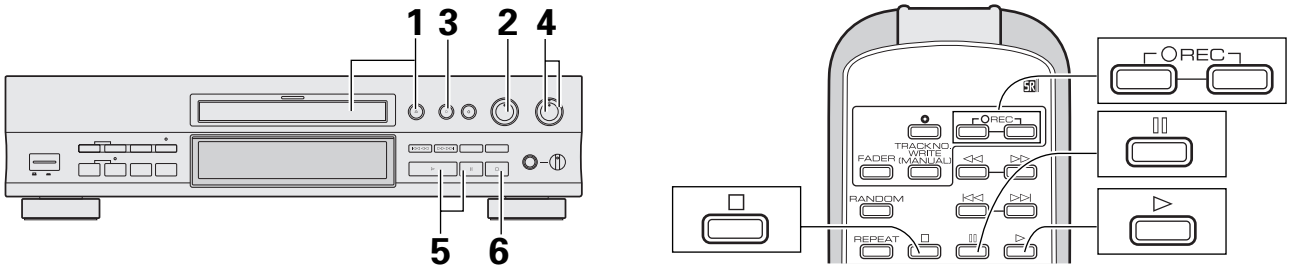
6 After recording, press the stop (■) button to end recording.

- "PMA REC" is displayed and the unit stops after recording the track data.



ANALOG-SOURCE RECORDING

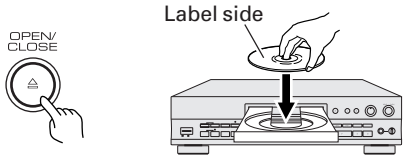
This function is for recording the analog output of analog record stable platter or compact cassette deck.



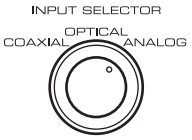
- After loading the disc, check that the CD-R or CD-RW indicator stops blinking and starts to light steadily.
  In case it does not light steadily or a character display (such as "Pro DISC") appears, refer to page 40.

1 Load a CD-R or CD-RW disc containing a recordable space.

For a disc loading, refer to p.15.



2 Set the INPUT SELECTOR to ANALOG.

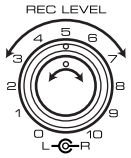


- Track numbers are automatically updated when the AUTO TRACK indicator is on. This function assumes that silent passages longer than 2 seconds mark the area between two tracks and automatically starts a new track number when a sound is detected next. Passages with a low input level or noise during passages that are supposed to be silent causes the function to misjudge where new track numbers should be created. In cases like these, create new track numbers manually. (See page 25.)

3 Press the RECORD (REC●) button(s).

This unit enters record-pause mode.

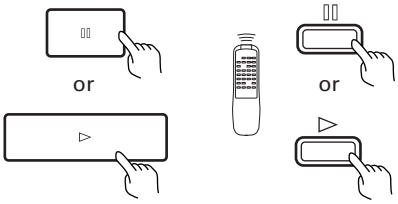
4 Adjust the recording level. (Refer to page 23 for the adjustment method.)



- Start playback of the source player.

5 Press the pause (II) or play (►) button in record-pause mode.

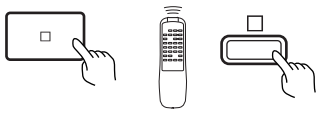
- This unit starts recording.
- Start playback of the source player after having started the recording of this unit.



- Press the PAUSE (II) or PLAY (►) buttons after the counter displays "00:00".

6 After recording, press the stop (■) button to end recording.

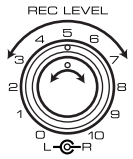
- "PMA REC" is displayed and the unit stops after recording the track data.



Recording level adjustment

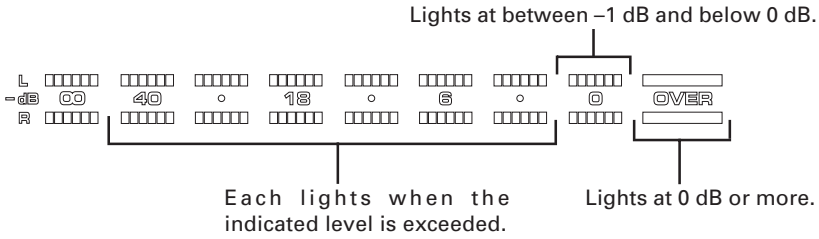
■ Adjustment reference

For recording of analog input, adjust the recording level so that the OVER-level indicator does not light even when the highest, or peak level is input. Sound may be distorted if the OVER-level indicator lights.



■ Level meter

The level meter segments light to indicate the input level during recording or play level during playback.

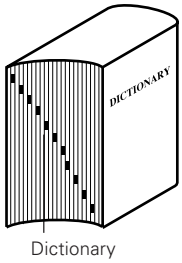


■ Minimum recording time per track

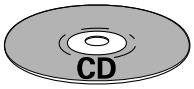
As the CD specifications dictate that each CD track should be no less than 4 seconds, even when the pause (❚❚) or stop (■) button is pressed in less than 4 seconds after the start of recording, recording does not pause or stop until a 4-second track is created by leaving a non-recorded blank in the insufficient period.
In this case, the next operation cannot be activated until a 4-second track has been created.

■ Track number write operation

Ordinary CD-digital audio contains the recording of track numbers so desired tracks can be selected and played. When recording with a CD-R recorder, however, you need to write the track numbers yourself. When recording from digital sources containing track number information (such as a CD, MD, DAT, or DCC), a new track number is recorded automatically when this unit detects a change track number information and sound from the digital source. In case of recording of a source which does not contain track number information such as an analog source or satellite broadcasting (BS), you must write a new track number by yourself between tracks. **(Be specially sure not to forget this for it is not possible to add track numbers once recording has completed.)**
For the track number write operation procedure, refer to page 25.



CD contains track number information just like a dictionary contains an index.

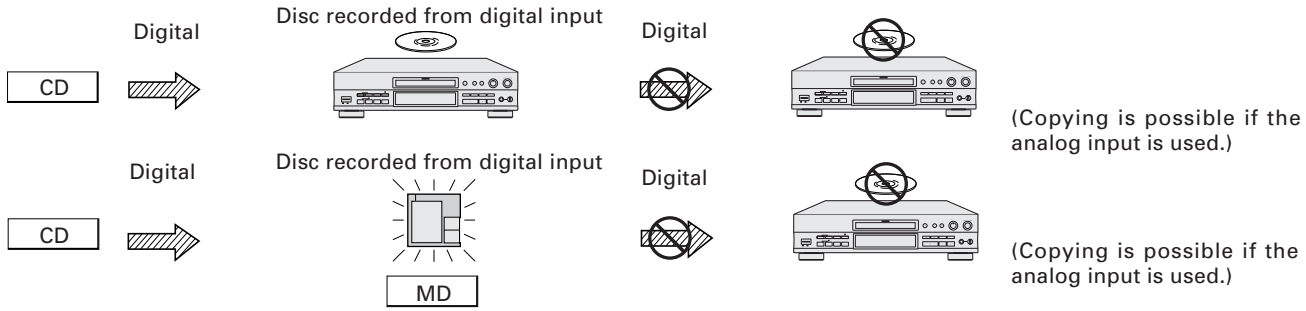


SCMS (Serial Copy Management System)

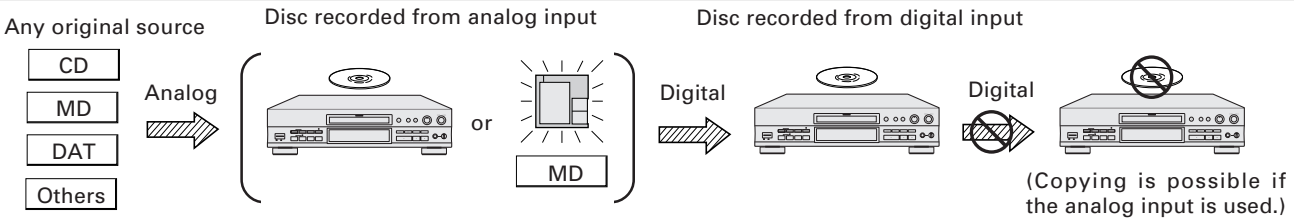
SCMS is the function for preventing disorderly copying by adding copy inhibit information to the digital signals. This system is basically intended to allow only one digital copy operation from the original source (CD, etc.).

Instances in which copying is inhibited

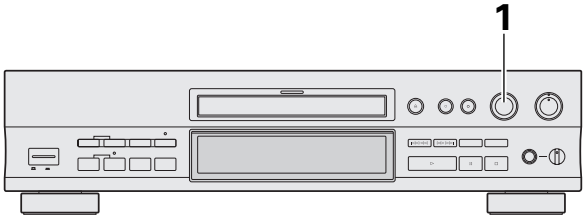
1 With a CD disc or MD music disc which is protected by copyright, digital recording is possible only for one generation.



2 With a disc recorded using analog input, digital recording is possible only for one generation regardless of the original source.



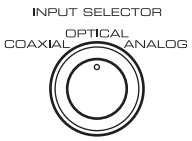
Checking the recording permission/inhibition condition



- You can also check for permission by pressing the RECORD (●) button.

1 Turn the INPUT SELECTOR.

(Refer to page 16.)



2 Play the source player.

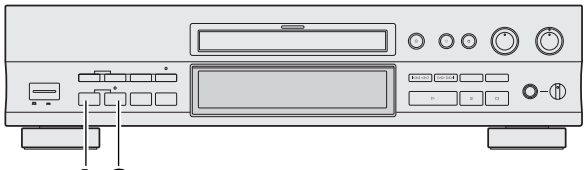
"CAN NOT" and "COPY" are displayed if the copy inhibit signal is detected in the source being played back.

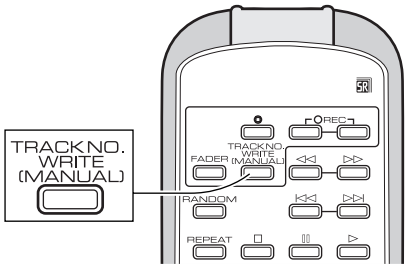
In case a copy inhibit signal is detected during recording

Recording pauses and "CAN NOT" and "COPY" are displayed when the copy inhibit signal is detected in the digital signal being recorded. Recording is continued if copying is permitted again.

TRACK NUMBER MANUAL WRITING

At the first, the track number automatic writing mode is selected automatically.





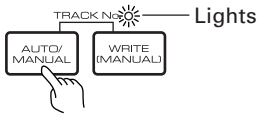
- Once the track number has been written, it cannot be modified or changed later.

- The WRITE (MANUAL) button is defeated while the WRITE (MANUAL) indicator is not lit.

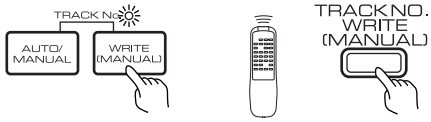
- The track number can be renewed by pressing the WRITE (MANUAL) button when recording has elapsed for 4 seconds or more.

■ Manual writing of track number

1 **Press the TRACK NO. AUTO/MANUAL bouton so that the WRITE (MANUAL) indicator lights.**



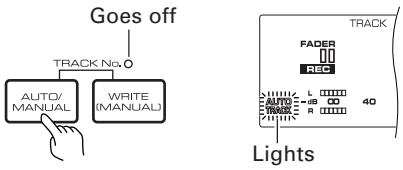
2 **Press the WRITE (MANUAL) button at the position where it is required to renew the track number during recording.**



■ Automatic writing of track number

- During recording, the track number is automatically renewed by detecting the track changes based on the input musical signal and digital sub-code signal.
- If the space between tracks is extremely short, the track number may not be advanced.

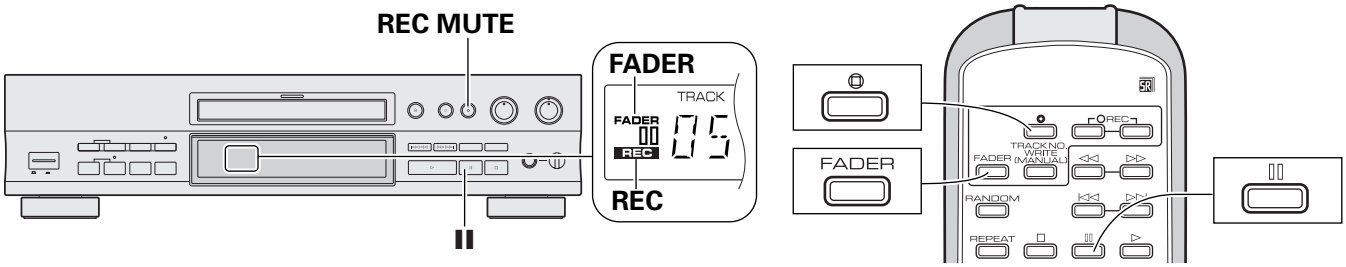
Press the TRACK NO. AUTO/MANUAL button so that the WRITE (MANUAL) indicator is not lit but that the AUTO TRACK indicator lights.



CAUTION

- When digitally recording DAT and DCC sources, be sure to start recording on the CD-R after pausing the source at the beginning of a track (start ID, etc.).
- In case of analog-source recording, if a track contains a section where the level is too low to be sensed on the level meter, track numbers may sometimes be written incorrectly. To prevent this, we recommend the use of the manual writing function with such a recording.
- Track numbers may sometimes be written incorrectly when recording the digital input of satellite broadcasting. In this case, we recommend the use of the manual writing function.

CONVENIENT FUNCTIONS FOR RECORDING



■ To pause recording

Press the pause (II) button to pause recording temporarily.
To restart recording, press the play (►) or pause (II) button.

- When the record-pause mode has continued for about 10 minutes, the record-pause mode stops. To enter the record-pause mode, press the RECORD button(s).

■ Creating a blank

Press the REC MUTE button during recording.
The REC indicator blinks and a blank is recorded. The unit automatically enters record-pause mode in about 4 seconds.
- To restart recording, press the play (►) or pause (II) button.
- To end recording, press the stop (■) button.

- You can create 4 second or longer silent passages by pressing the REC MUTE button. The unit is set to the record-pause mode when the button is released.

> - The REC MUTE button can be used during recording or when going from recording to record-pause mode. The REC MUTE button cannot be used when the record-pause mode is activated from the stop mode.

■ Starting recording with fade-in

Press the FADER button in record-pause mode.
Recording starts by gradually increasing the recording level. The FADER indicator blinks in this period.

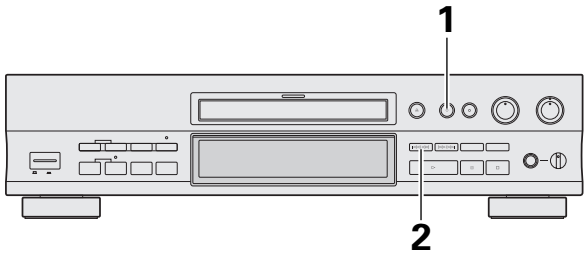
■ Stopping recording with fade-out

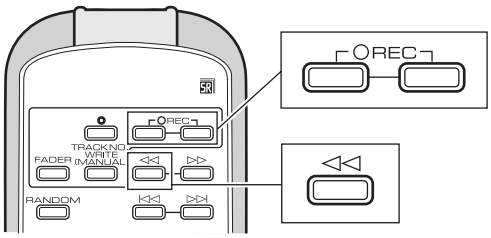
Press the FADER button in record mode.
Recording stops by gradually decreasing the recording level. The FADER indicator blinks in this period. Recording stops in 5 seconds after the button is pressed. The unit enters the record-pause mode.

- To restart recording, press the play (►) or pause (II) button.
- To end recording, press the stop (■) button.

■ Ending disc recording with fade-out

When the remaining recording time falls below 3 seconds, fade-out starts automatically and recording is ended.
This prevents a sudden interruption of sound during playback of the recorded disc.





■ Checking the recording end point from the middle of a disc

1 **Press the RECORD (REC●) button(s) to initiate the record-pause mode.**

2 **Press and hold the ◄◄ button in the record-pause mode.**

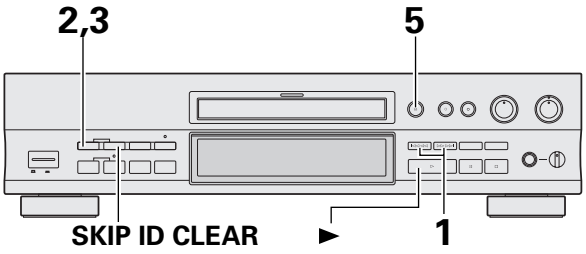
The played position is moved backward and reverse play sound is heard while the button is held depressed. When the button is released, the previous recording is played until the end point, where the unit enters record-pause mode again.

- Holding the ◄◄ button depressed allows you to move the played position backward by about 2 minutes from the recording end point.
- Pressing the RECORD (REC●) button(s) during playback puts the unit back to record-pause mode again.
- Pressing the ►► button allows forward manual search of the recording end point.
- The ❚❚ indicator turns off during playback until the recording end point.

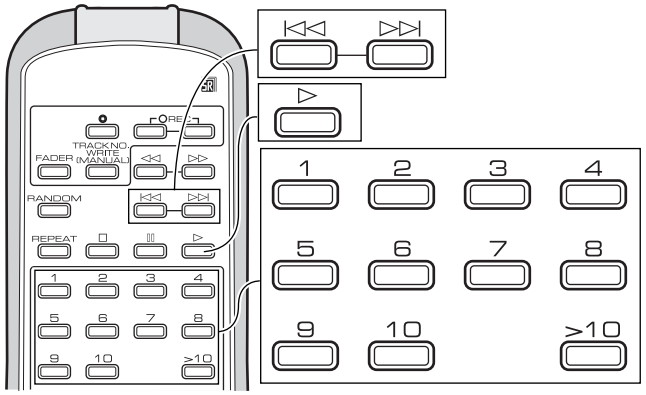
SKIP ID RECORDING

By setting track skip IDs to the tracks which failed or which consist of a blank, they can be skipped when the disc is played later.

CAUTION:
Skip IDs can be set or cleared for up to a total of 21 tracks. If skip IDs are set or cleared repeatedly, the number of tracks to which track skip IDs will decrease.
Skip IDs cannot be set or cleared with CD discs or finalized CD-R, CD-RW discs.

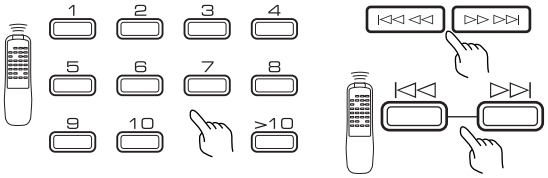


● Skip playback is not possible with an ordinary CD player which does not incorporate the skip function.

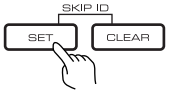


A. Setting skip ID to a track (Track skip)

1 Play the track to be skipped.
Select it with the numeric buttons of the remote control unit or a track search button (I◄◄ or ►►I).



2 Press the SKIP ID SET button.
"SKIP" and "SET?" are displayed alternately.

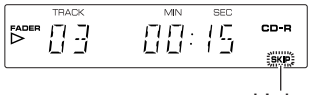


3 To set the skip ID, press the SKIP ID SET button again.

4 Skip IDs can be set to other tracks by repeating steps 1 to 3 for each of them.

5 After having set the required skip IDs, press the OPEN/ CLOSE (▲) button.

● If skip IDs have already been set, the SKIP indicator lights on the display.



Lights.

● When the track search button (I◄◄ or ►►I) is pressed while "SKIP" and "SET?" are displayed, tracks to which the skip IDs are not set will be played in order of track numbers.

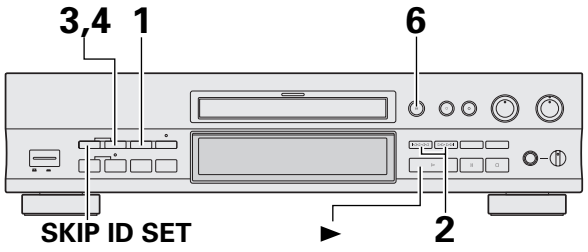
● The selected tracks play back repeatedly.

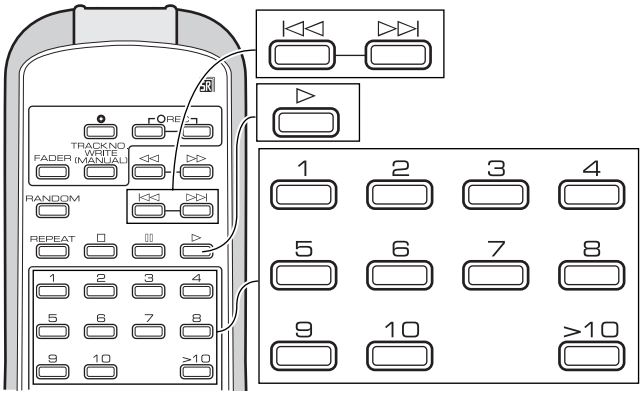
● When the play (►) button or SKIP ID CLEAR button is pressed during the setting operation, the setting mode is canceled.

● When an attempt is made to set or clear more skip IDs than possible, "FULL" is displayed and no more recording is possible.

● When the button is pressed to remove the disc, the skip ID setting data is recorded on the disc. At this time, and blinks "OPEN" is displayed for a few seconds, and the tray opens after the skip ID setting data has been recorded.

CAUTION:
Skip IDs cannot be cleared with CD discs or finalized CD-R, CD-RW discs.





B. Clearing skip ID of a track

- With a CD-R or CD-RW disc which does not contain skip IDs, the SKIP ON indicator will not light even when the SKIP PLAY button is pressed.

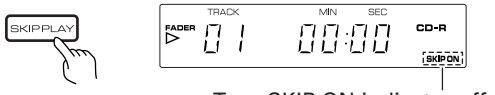
- If skip IDs have already been set, the SKIP indicator lights on the display.

Lights.

- When the track search button (I◄◄ or ►►I) is pressed while "SKIP" and "CLEAR?" are displayed, tracks to which the skip IDs are set will be played in order of track numbers.
- The selected tracks play back repeatedly.
- If you press the SKIP ID CLEAR button during playback of a track without a skip ID, the unit searches for the next track with a skip ID (or it returns to the beginning if there is no next track) and starts playback.
- To cancel the clearing mode, press the play (►) button or SKIP ID SET button.

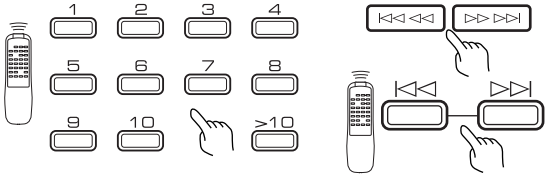
- When the button is pressed to remove the disc, the skip ID clear data is recorded on the disc. At this time, and blinks "OPEN" is displayed for a few seconds, and the tray opens after the skip ID clear data has been recorded.

1 Press the SKIP PLAY button to turn the SKIP ON indicator off.



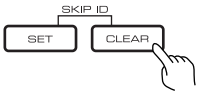
Turn SKIP ON indicator off.

2 Play the track which is not to be skipped.
Select it with the numeric buttons of the remote control unit or a track search button (I◄◄ or ►►I).

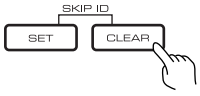


3 During playback of the track which is not to be skipped, press the SKIP ID CLEAR button.

"SKIP" and "CLEAR?" are displayed alternately.



4 To clear the skip ID, press the SKIP ID CLEAR button again.



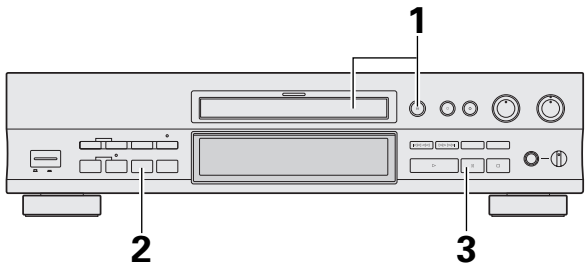
5 Skip IDs can be cleared from other tracks by repeating steps 2 to 4 for each of them.

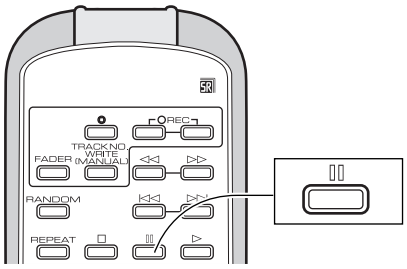
6 After having cleared the required skip IDs, press the OPEN/CLOSE (▲) button.

FINALIZATION (TOC RECORDING)

What is finalization?

- Finalization is the final process in recording a CD-R or CD-RW disc that is playable on standard CD players. (However, CD-RW discs, whether finalized or not, can only be played back on a CD-RW disc player.)
- Once a disc is finalized, neither recording nor skip ID setting/clearing is possible on the disc; be very careful.
- Never cut the power supply during finalization, for this may lead to disc damage.



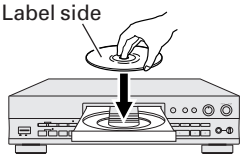


Finalization procedure

- Ensure that there is no scratch, dust or stain on the disc.
  If the disc is dusty or stained, clean it by referring to "Disc maintenance" on page 9.

1 Load a CD-R or CD-RW disc which has been recorded on.

For a disc loading, refer to p.15.

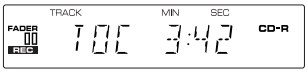


- If finalization is not required, press the **stop (■) button**; finalization will be aborted.

- **The procedure is canceled automatically when the unit has remained in record-pause mode for about 10 minutes or more.**

2 Press the FINALIZE button.

The unit enters record-pause mode.

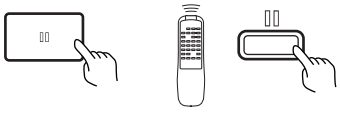


- The displayed time varies depending on discs.

■ Wait until the time information is displayed.

3 Press the pause (II) button.

Finalization starts now.



- The remaining time until the completion of finalization is displayed during finalization.

- It usually takes about 4 minutes until the finalization completes.
- When the CD-R finalization is completed normally, the CD-R indicator changes to the CD indicator, and the unit enters stop mode automatically.
- When the CD-RW finalization is completed normally, the FINALIZE indicator lights and the unit enters stop mode automatically.

CAUTION:

- **Once finalization is started, no operation button is accepted until the finalization completes.**
- **If a scratched, stained or dusty disc is subjected to finalization, the finalization may sometimes not complete.**
  In case finalization does not complete in about 10 minutes from the start, it can be forced to be aborted by pressing the stop (■) button. But such a disc cannot be played on ordinary CD players.
- **Never unplug the power cord during finalization.**
  If the power supply is interrupted due to power failure or by mistake during finalization, the remaining finalization resumes as soon as the power supply is recovered. In this case "RESUME" is displayed until the finalization is completed. Note that the disc finalization may not resume properly in some cases.

ERASING (CD-RW ONLY)

Erasing CD-RW discs

CD-RW discs can be erased and new recordings can be made where data has been erased. The following types of erasing are provided.

A Last Track Erasing:

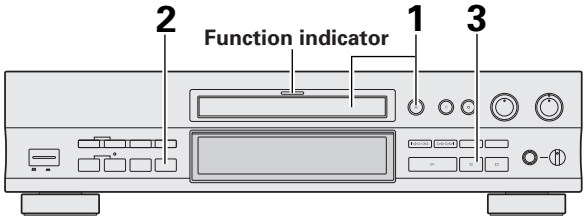
Erases the last track. This operation is not possible on a CD-RW disc that has been finalized.

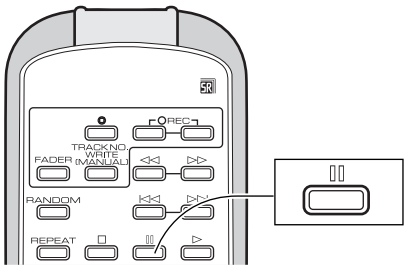
B. All Tracks Erasing:

Erases all tracks.

C. All Disc Erasing:

This operation deletes all data on the disc. This operation is mainly performed to enable disc recovery and is not normally performed.





Switching erase modes

Each press of the ERASE button switches erase modes in the order shown below.

Erase Off → Last track erasing
↑ ↓
All tracks erasing ←

Finalized CD-RW discs:

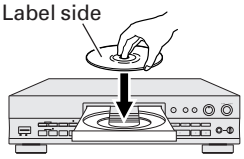
Erase Off→All tracks erasing
↑ ↓

- Press the ERASE button once to start all tracks erase on a finalized CD-RW disc.

A. Last track erasing (take a few seconds. Not possible on a finalized CD-RW)

1 Load a CD-R or CD-RW disc which has been recorded on.

For a disc loading, refer to p.15.

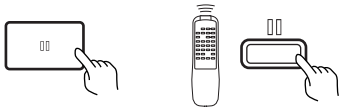


2 Press the ERASE button.

- The display panel successively displays "LAST", "TRACK" and "ERASE?" . Then the function indicator blinks in orange indicating that the recorder is in last track erase standby mode. The display panel displays the number of the track that can be erased and "TRACK" and "ERASE."

Do not allow more than 8 seconds to elapse after step 2 has been performed before proceeding with step 3.

3 Press the pause (II) button to start the last track erasing.



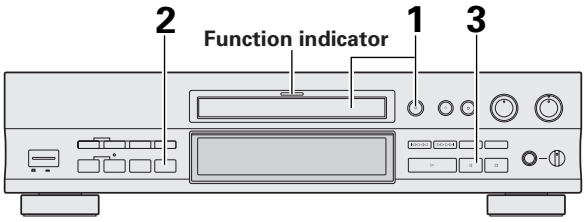
- The function indicator lights in orange and last track erasing starts.
- During last track erasing, the number of the erasing track and "TRACK" and "ERASE" blinks successively.

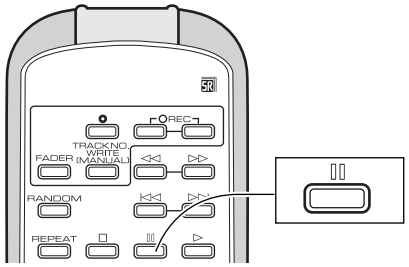
- The recorder stops when Last track erasing stops.

CAUTION:

- **The power must not be turned off during erasing since this could destroy the disc.**
  If a power outage occurs during erasing or you should inadvertently turn off the power during erasing, turn on the power when it comes back on again. The erase operation is then automatically restarted and takes 3 minutes for All tracks erasing and maximum recording time plus 5 minutes for Disc erasing. However, there is no guarantee that the disc will be erased normally. The erase operation that is restarted when the power comes back can be stopped by pressing the stop (■) button for 10 seconds. If this erase operation is stopped, the message "CHECK", "DISC" appears to indicate that the disc has not been normally erased.
- **If the message "CHECK", "DISC" appears during erasing and erasing stops, the disc may be damaged.**
  Should this happen, eject the disc and check it. Then try erasing it again.
- **Be sure to remove the disc after the erase operation and before turning off the power.**
  If the power is turned off with the disc still in the recorder, the backup data is deleted and the erase operation is canceled.

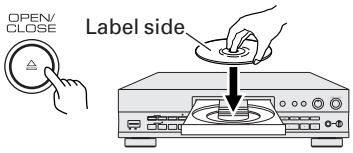
ERASING (CD-RW ONLY)





B. All tracks erasing (takes a approx. 3 minutes for finalized CD-RW)

1 **Load a CD-R or CD-RW disc which has been recorded on.**
For a disc loading, refer to p.15.



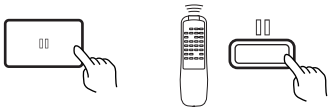
- In the case of a CD-RW which has been finalized, "ALL," "TRACK," "ERASE?" and "ERS ✱:✱✱" are displayed repeatedly. In the case of a CD-RW which has not been finalized, "ALL," "TRACK" and "ERASE?" are displayed in succession.

2 **Press the ERASE button twice (once to start all tracks erase on a finalized CD-RW disc).**

- The function indicator blinks in orange indicating that the recorder is in all tracks erase standby mode.

In the case of a CD-RW which has not been finalized, do not allow more than 8 seconds to elapse after step 2 has been performed before proceeding with step 3.

3 **Press the pause (II) button to start the all tracks erasing.**



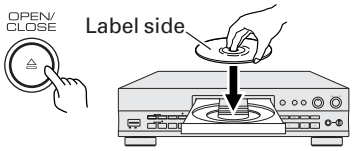
- The function indicator lights in orange and All Tracks Erasing starts.
- During All tracks erasing of a CD-RW disc that has not be finalized, "ALL", "TRACK" and "ERASE" blink successively.
- During All tracks erasing of a finalized CD-RW disc, "ERS ✱:✱✱" while the remaining time is displayed.

- All tracks erase is completed in several seconds for a CD-RW which has not been finalized.
- You can stop the erase process by pressing the Stop (■) button for 10 seconds. However, if the erase operation is stopped, the message "CHECK", "DISC" appears to indicate that the disc has not been normally erased.

- The recorder stops when All tracks erasing is completed.

C. All disc erasing (takes recordable time plus 5 minutes)

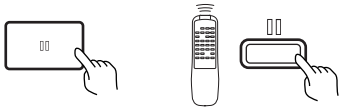
1 **Load a CD-R or CD-RW disc which has been recorded on.**
For a disc loading, refer to p.15.



2 **Press and hold the ERASE button for about 4 seconds.**

- The display panel displays "ALL," "DISC," "ERASE?" and "dE ✱✱:✱✱" successively. Then the function indicator blinks in orange indicating that the recorder is in the All disc erase standby mode.

3 **Press the pause (II) button to start the all disc erasing.**

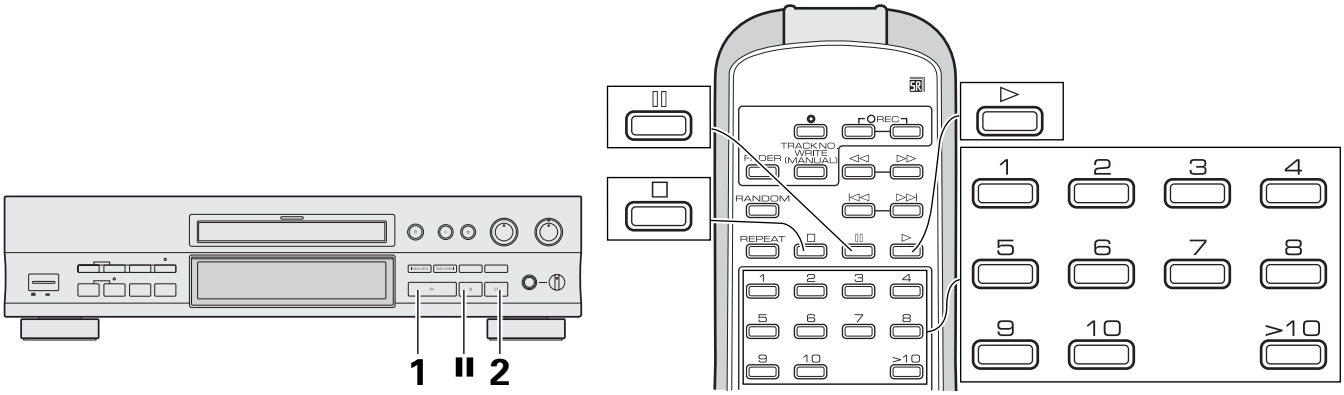


- The function indicator lights in orange and All Disc Erasing starts.
- During All disc erasing, "dE ✱✱:✱✱" while the remaining time is displayed.

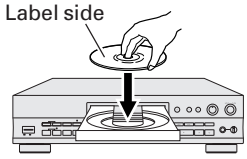
- You can stop the erase process by pressing the Stop (■) button for 10 seconds. However, if the erase operation is stopped, the message "CHECK", "DISC" appears to indicate that the disc has not been normally erased.

- The recorder stops when All disc erasing is completed.

PLAYBACK



Place the disc on the disc tray with the label side facing upward.

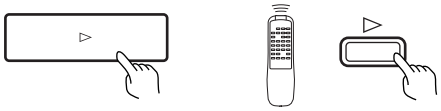


For a disc loading, refer to p.15.

Starting playback

1 Press the play (►) button.

This unit starts playback.



2 Press the stop (■) button to stop playback.

To pause playback

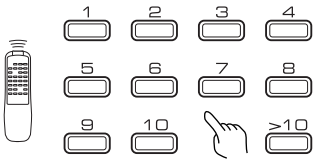
Press the pause (II) button to pause playback temporarily.

To restart playback, press the play (►) or pause (II) button.

- When the pause mode has continued for about 10 minutes, the pause mode stops and unit enters the stop mode.

Playing from the desired track (Direct track selection)

Select the desired track with the numeric buttons of the remote control unit.

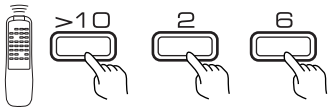


- A higher track No. than the total number of tracks on the disc cannot be selected.

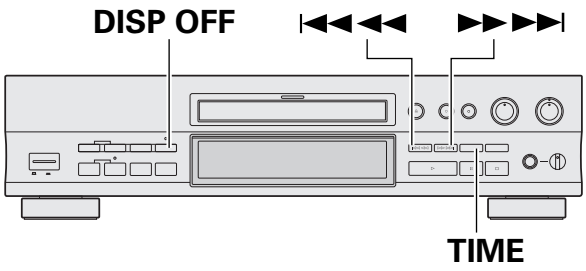
- To select track No. 1 to 10, simply press the corresponding button.
- To select track No. 11 or higher, press the **>10 button** first.

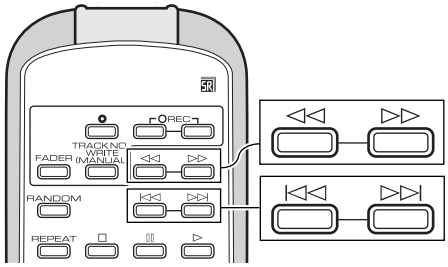
(Example) To select track No. 26

- Press in order of (>10), (2) and (6).



When selecting a track number, press numeric buttons at intervals of less than 5 seconds.



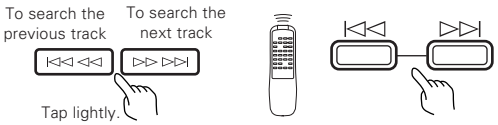


Each of the I◄◄◄◄ and ►►►►I buttons of the main unit provides two functions, as a track search button and manual search button.

Searching an adjacent track (Track search)

A desired track can be searched by specifying it using the track search (I◄◄, ►►I) buttons.

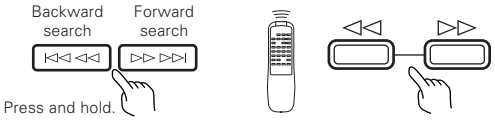
Press the track search (I◄◄ or ►►I) button.



- Pressing ►►►►I (or ►►I) during playback or when playback is paused or stopped skips the played position to the beginning of the next track. To skip to a track located after the next track, press ►►►►I (or ►►I) for the required number of times. When programmed playback is activated, pressing ►►►►I (or ►►I) skips to the next track in the program.
- Pressing I◄◄◄◄ (or I◄◄) skips the played position to the beginning of the current track. To skip to a track located before the current track, press I◄◄◄◄ (or I◄◄) for the required number of times. When programmed playback is activated, pressing I◄◄◄◄ (or I◄◄) skips to the previous track in the program.

Searching the desired point (Manual search)

Press and hold the manual search button (◄◄ or ►►).



- Pressing and holding ►►►►I (or ►►) during playback or when playback is paused moves the played position in the forward direction at a high speed. When a disc has been searched until the end, "END" is displayed and the unit enters the pause mode, which can be released by pressing I◄◄◄◄ (or ◄◄).
- Pressing and holding I◄◄◄◄ (or ◄◄) moves the played position in the reverse direction at a high speed. When a disc has been searched in the reverse direction until the beginning, the unit enters play mode.

- During programmed playback, only the current track being played can be searched in the forward or reverse direction. When the current track has been searched in the forward direction until the end, the unit enters pause mode at the position immediately before the next track; press the **play (►), pause (II)** or ◄◄ button to release the pause mode. When the current track has been searched in the reverse direction until the beginning, programmed playback restarts from the position immediately before returning to the previous track.

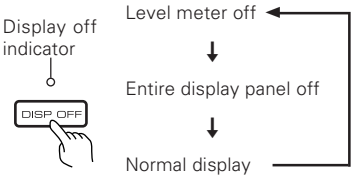
Turning the display off

The information on the displayed panel can be turned off during playback.

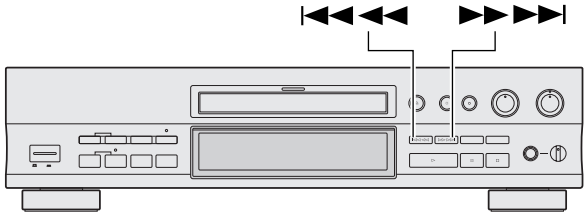
Press the DISP OFF button.

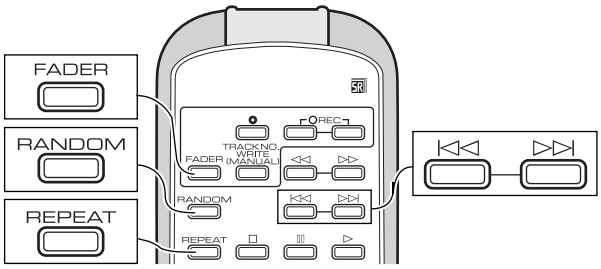
- When the display mode is in the entire display panel off, the display off indicator lights.
- Even in DISPLAY OFF the display will turn on for a few seconds when an operation button is pushed.

Each press of the DISP OFF button changes the display condition as follows.



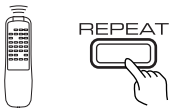
- When you press the **TIME** button, the display comes on for a few seconds so you can check the track information.
- The display cannot be turned off during recording, even if you press **DISP OFF** button.
- The display will not turn off during pause, even if you press **DISP OFF** button (it will, however, turn off once playback is resumed).





Playing tracks repeatedly (Repeat playback)

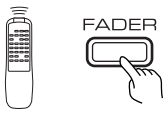
Press the REPEAT button of the remote control unit.



- Pressing once initiates 1-track repeat and the RPT-1 indicator lights. In this mode, the track being played is played repeatedly. This is possible in normal play, programmed play and random play modes.
- Pressing twice initiates all-track repeat and only the RPT indicator lights. In this mode, all tracks are played repeatedly.
- In normal play mode, all tracks on the disc are played repeatedly (all-track repeat).
- In programmed play mode, all tracks in the program are played repeatedly in the order they are programmed.

Fade-in/fade-out during playback

- **When the FADER button is pressed during pause, playback restarts with fade-in.**
- **When the FADER button is pressed during playback, fade-out starts and playback pauses after it.**



- The fade-in and fade-out periods are both about 5 seconds.

Fade-in and fade-out are not applied to the digital outputs.

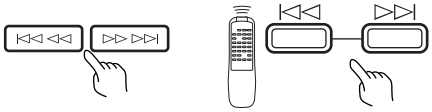
Playing tracks in the order selected by the player (Random playback)

Press the RANDOM button of the remote control unit.

- The RDM indicator lights and plays all tracks from the disc at random.

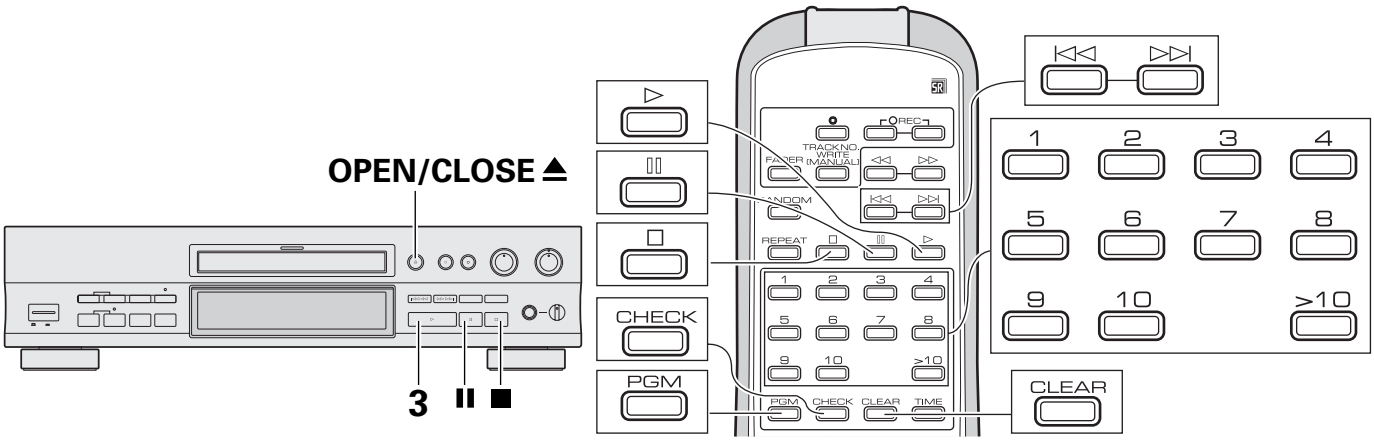
Checking the playing time of each track (1-track time display)

When the ►►I button is pressed in stop mode, each press displays the playing time of each track in order of track numbers.
Pressing the I◄◄ button displays the playing times in the reverse order.



- The SKIP indicator lights with tracks to which the skip IDs have been set. (Refer to p. 28.)

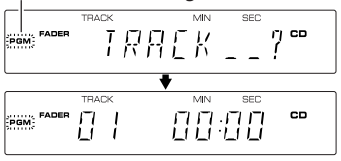
PROGRAMMED PLAYBACK



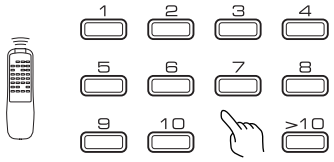
Playing Tracks in the Desired Order

1 Press the PGM button of the remote control unit.

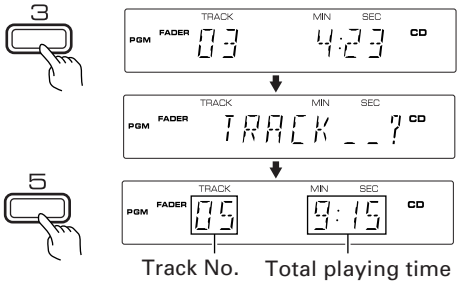
The PGM indicator lights.



2 Using the numeric buttons, select the tracks in the order you want to play them.



If the current mode is stop mode, each track can also be programmed by selecting its track number with the I◄◄ or ►►I button and pressing the PGM button.



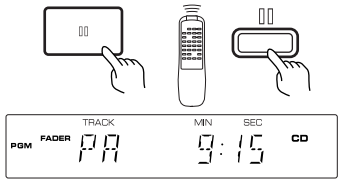
3 Press the play (►) button.

The tracks are played in the order they are programmed.

- Up to 24 tracks can be programmed.
- If the total playing time of the programmed tracks is 100 minutes or more, the total playing time is not displayed.

Programming pause

If the pause (II) button is pressed during programming in stop mode, a pause is programmed. (It cannot be programmed as the first step of a program.)



- Pause is also counted as a track.

Add programs

- Even during programmed playback, tracks can be added to the program by selecting them with the numeric buttons.

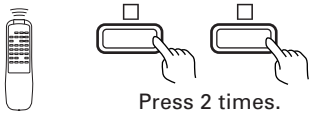
Program reservation

If tracks are programmed by pressing the PGM button during normal playback, the programmed tracks will be played from the beginning automatically when the playback of the track now being played is completed.
Programmed playback can also be started from the beginning by just pressing the play (►) button before the normal playback completes.

Clearing the entire program

The program can be cleared with either A or B below.

A **Press the stop (■) button to stop programmed playback, then press the stop button again.**



B **Press the OPEN/CLOSE button.**

Clearing a track from the program

- If the button is pressed during programmed playback, the tracks after the track being played can be cleared.

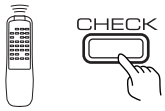
Press the CLEAR button of the remote control unit.

- Each press clears the newest track in the program.

Checking the programmed tracks

- This operation is available in stop mode and after tracks have been programmed. If the programmed tracks are being played, stop playback before proceeding to this operation.

Press the CHECK button of the remote control unit.



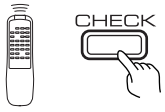
Program step No. Programmed track No.

- Each press displays the track number programmed for each step of the program.
- When the button is pressed while the last step of the program is displayed, "00" is displayed. Press again to display the first program step.

Replacing a track in the program

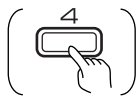
- This operation is available in stop mode and after tracks have been programmed. If the programmed tracks are being played, stop playback before proceeding to this operation.

1 **Press the CHECK button of the remote control unit the required number of times until the program step with the track number to be replaced is displayed.**

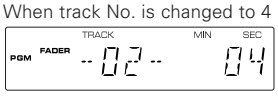


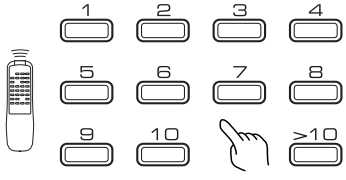
2 **Select the new track number with the numeric buttons.**

- The track number can also be selected with the ⏮ or ⏭ button.



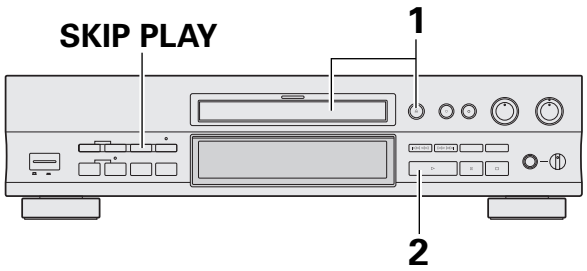
When track No. is changed to 4

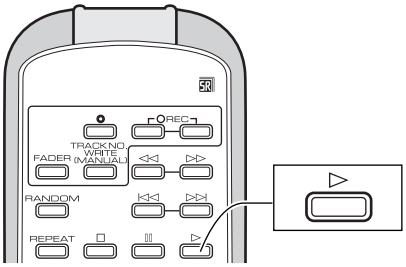




3 **Other tracks can also be replaced by repeating steps 1 and 2.**

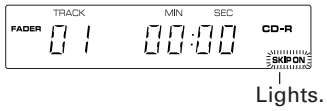
SKIPPING UNDESIRED TRACKS (SKIP PLAYBACK)





By setting skip IDs to the tracks which you do not want to play, these tracks can be skipped when the disc is played. For setting skip IDs, refer to page 28.

1 Load a disc containing the recording of skip ID data.

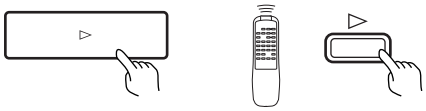


Lights.

- In case the disc contains skip ID data, the SKIP ON indicator lights automatically.
- In case the disc does not contain skip ID data, the SKIP ON indicator does not light.

2 Press the play (►) bouton.

- The disc is played by skipping tracks to which skip IDs have been set.



■ In case skip playback is not required

Discs containing tracks to which track skip IDs have been set can also be played without skipping them. Just press the SKIP PLAY button to turn the SKIP ON indicator off before playing the disc.

Turn SKIP ON indicator off.

- The SKIP PLAY button is not accepted if the disc does not contain skip ID data.

CHARACTER MESSAGE LIST

Message	Description	Ref. Page
OPEN	The tray is being opened.	p. 15
CLOSE	The tray is being closed.	p. 15
"SET" "UP"	The unit is performing initial setup for recording. Please wait a while.	
"TOC" "READ"	The unit is reading the TOC of the disc. Please wait a while.	
1-SYNC	The unit is standing by for 1-track automatic digital recording. The recording will start in synchronism with the start of the player.	p. 18
AL-SYNC	The unit is standing by for all-track automatic digital recording. The recording will start in synchronism with the start of the player.	p. 19
"CAN NOT" "SYNC"	This display will appear when the DIGITAL SYNCHRO button is pressed if the INPUT selector is set for an analog source, or even in digital mode, if the source selected is other than a CD, Mini Disc, DAT, or DCC.	p. 18, p. 19, p. 20
MONI	The unit is monitoring the input selected with the input selector.	p. 16
"INPUT" "CD" (MD, DAT, DCC)	The unit displays the source it is monitoring (for CD, MD, DAT, and DCC).	p. 16
"PMA REC"	Temporary TOC data is being recorded in the disc's PMA (Program Memory Area). **Never turn off the power while this display is showing.**	p. 17, p. 18, p. 19, p. 21, p. 22
"TRACK ?"	The current operation is the track programming operation. Select a track with the numeric buttons or I◄◄ (or ►►I) button.	p. 36
"SKIP" "SET?"	The current operation is the track skip setting operation. If you want to skip a track, select it with the SKIP ID SET button.	p. 28
"SKIP" "CLEAR?"	The current operation is the track skip clear operation. If you want to clear the skip designation of a track, select it with the SKIP ID CLEAR button.	p. 29
"LAST" "TRACK" "ERASE?"	Erases the last track. If you want to erase the last track, press the pause (II) button.	p. 31
"ALL" "TRACK" "ERASE?"	Erases all tracks. If you want to erase the all tracks, press the pause (II) button .	p. 32
"ALL" "DISC" "ERASE?"	Erases the entire disc (initializing it). If you want to erase the disc, press the pause (II) button.	p. 32
"PIONEER" "CD-R"	The current operation is the store-front demonstration. The demonstration stops when any key or control is operated. If no key or control has been pressed for about 3 minutes after the demonstration was stopped, it will start again. The demonstration mode can be initiated by pressing the I◄◄ ◄◄ button when the display goes on and the disc is read after turning on the power before timer play starts. (When no disc is provided, press the I◄◄ ◄◄ button immediately after "00 00:00" has appeared on the display.) To cancel the demonstration mode, press the ►► ►►I button when the display goes on and the disc is read after turning on the power before timer play starts. (When no disc is provided, press the ►► ►►I button immediately after "00 00:00" has appeared on the display.)	p. 41

In addition to above, other character messages are also displayed as the unit detects troubles during use.
For other character messages than above, refer to "Self-diagnostics" on page 40.

TROUBLESHOOTING

In case of trouble, first check the following list. What seems to be a failure of the unit is sometimes due to imperfect maintenance, defective disc or unaccustomed operation. Such troubles are often recovered by correcting simple mistake or misunderstanding or by simple maintenance operation. If your trouble cannot be recovered after checking the following list, please call you nearest PIONEER service center or station.

Self-diagnostics

This unit incorporates a self-diagnostic function.
When it detects trouble during an operation, it displays one of the following messages on the display panel.

Display	Cause	Treatment	Ref. Page
Alternate display of "CHECK and "DISC"	The disc is stopped due to dirt, stain, scratch or vibration.	Take out the disc and check for dirt, dust, scratch, etc.	page 9
	The disc may be loaded upside down.	Take out and check the disc.	page 15
		(If the same messages are displayed again after the disc is reloaded, unplug the power cord and plug it in again. If the same messages are displayed again, please contact a PIONEER authorized service center.)	
Display blinks "CHECK"	A system error occurred perhaps due to noise or static electricity.	Unplug the power cord and plug it in again. If the same messages are displayed again, please contact a PIONEER authorized service center.	

Information messages related to recording operation

Display	Cause	Treatment	Ref. page
Alternate display of "CAN NOT" and "COPY".	Digital musical signal containing copy inhibit signal based on SCMS is being input.	Record the source through analog input or record copy-permitted music.	page 24
Alternate display of "CAN NOT" and "REC".	The digital input is interrupted.	Check if the digital input cable is not disconnected and if the power of the source player is on.	page 10
	The data (CD-ROM, etc.) provided cannot be recorded.	Check whether the source is a regular music source.	page 17
Cyclic display of "CHECK", "INPUT" and "CD ?".	The source player was already playing when the DIGITAL SYNCHRO button was pressed.	Stop playing the source player. In a while, "1-SYNC" or "AL-SYNC" is displayed, and the unit is set to the synchro recording standby mode.	page 18 page 19 page 20
Alternate display of "SET" and "UP".	The unit is making preparations for recording.	Wait until these messages disappear.	
"REPAIR"	Because the disc was left in the unit after recording and the power plug was unplugged later, the track number and recording time data have been cleared without being recorded on the disc.	While "REPAIR" is displayed, the track number and recording time data are repaired by tracking the recorded area. Further recording or finalization is possible whenever the display returns to the previous condition. Tracing of the recorded area takes about 40 minutes if the disc has been recorded fully.	
"REC FULL"	No more recording is possible because the available recording time of the disc has been used fully or 99 tracks have already been recorded on the disc.	Replace the disc with a new one. Erase a CD-RW disc.	page 16 page 31
"Pro DISC"	The loaded disc is a CD-R or CD-RW disc for professional use without "FOR CONSUMER" indication.	Load a CD-R or CD-RW disc with "FOR CONSUMER" indication. Take out and check the disc.	page 8 page 16

Information messages related to playback operation

Display	Cause	Treatment	Ref. page
"NEW DISC"	A blank disc is loaded. An attempt is made to play a blank disc.	The loaded disc is a blank CD-R or CD-RW disc. Recording is possible but playback is not.	page 8 page 15
"NO DISC"	An attempt is made to start playback without loading a disc.	Open the tray and check if a disc is loaded.	page 15
"RESUME"	The unit is resuming an operation. After the power supply is cut off by a power failure or by mistake during recording, the unit enters RESUME mode so that additional recording is possible.	Wait until the message disappears.	page 17 page 30

Symptom	Cause	Remedy
Power cannot be turned on.	The power cord is unplugged from the power outlet.	Plug the power cord into a power outlet.
	The power was turned off from the component (stereo amplifier, audio time, etc.) to which it is connected.	Turn on the component into which the power cord is connected.
Playback is impossible.	Signal connections are incorrect.	Connect properly as indicated in "CONNECTIONS".
Recording is impossible.	Signal connections are incorrect.	Connect properly as indicated in "CONNECTIONS".
	The CD-R or CD-RW disc in use has been finalized.	Use a non-finalized disc. **Erase a CD-RW disc.**
	The input selection is incorrect.	Select the input connected to the desired source.
	The REC LEVEL control is set too low.	Increase the recording level to an optimum level.
Recorded sound is distorted.	Signal connections are incorrect.	Connect properly as indicated in "CONNECTIONS".
	There is interference from a TV set.	Turn the TV power off or install this unit apart from the TV.
	The disc is damaged or warped.	Use another disc.
	The recording level is set too high.	Decrease the recording level.
	The disc is extremely dirty.	Clean the disc.
Remote control operation is impossible.	The remote control batteries are exhausted.	Replace both of the remote control batteries with new ones.
	There is an obstacle between the remote control unit and main unit.	Remove the obstacle.
	The remote control unit is operated outside the remote controllable range.	Operate in the remote controllable range.
Certain tracks are skipped without being played.	The SKIP PLAY button is set to ON.	Set the SKIP PLAY button to OFF.
Skip playback does not occur.	The SKIP PLAY button is set to OFF.	Set the SKIP PLAY button to ON.
A recorded CD-R disc cannot be played on other CD players.	● The disc has not been finalized after recording. ● When such a disc is loaded in the unit, the CD-R indicator lights up. (Refer to page 8.)	Finalize the disc. (Refer to page 30.)
The point-of-sale demonstration is displayed. (Note)	The demonstration mode can be initiated by pressing the I◄◄ ◄◄ button when the display goes on and the disc is read after turning on the power before timer play starts. (When no disc is provided, press the I◄◄ ◄◄ button immediately after "00 00:00" has appeared on the display.) (Activating the demo mode.)	To cancel the demonstration mode, press the ►► ►►I button when the display goes on and the disc is read after turning on the power before timer play starts. (When no disc is provided, press the ►► ►►I button immediately after "00 00:00" has appeared on the display.) The demonstration will not be displayed any more.

(Note) This displays certain characters, like PIONEER, SKIP, and PROGRAM, as a point of sale demonstration.
If the unit does not operate normally due to external effects such as static electricity, disconnect the power plug from the outlet and insert again to return to normal operating conditions.

INDEX

Term	Function	Ref. Page
CD-R disc:	Compact Disc - Recordable.	p. 8, 16
CD-RW disc:	Compact Disc - Rewritable.	p. 8, 16
Consumer disc:	CD-R or CD-RW disc designed for recording music for personal entertainment use.	p. 8, 16
Demonstration:	Special display mode for use in point-of-sale demonstration.	p. 39, 41
Digital synchro recording (automatic digital recording):	Function which starts/stops recording automatically by detecting the play/stop modes of a digital component.	p. 18, 19, 20
Disc damage:	Phenomenon with which recording and playback of disc become impossible due to physical shock or power failure during recording.	p. 40
Disc identification:	Operation of checking whether the loaded disc is a CD, CD-R or CD-RW.	p. 15
Fader:	Function for recording or playing sound by smoothly varying the volume.	p. 26, 35
Finalization:	Operation for making a recorded CD-R disc playable on ordinary CD players.	p. 30
Label side:	The disc side on which letters, etc., are printed.	p. 15
PMA:	Program Memory Area. The area used for temporary storage of TOC data until finalization of a CD-R or CD-RW.	p. 17, 18, 19 21, 22
Professional disc (Pro DISC):	CD-R or CD-RW disc for other purpose than the consumer use (refer to "Consumer disc"). The applications of this disc are not limited.	p. 8, 16
Recording permitted/ inhibited:	Statuses set with the SCMS, in which digital recording is enabled/disabled respectively.	p. 24
Remaining recording time:	Time of the disc's non-recorded section where recording is possible.	p. 13
RESUME:	Operation initiated in case of trouble in recording, consisting of recovery of the disc to enable next recording.	p. 17, 30, 40
SCMS:	System for restricting personal recording (home-use recording) for copyright protection.	p. 24
Skip:	Refer to "Skipping undesired tracks".	p. 28, 38
Skip ID:	Identification which sets or cancels skipping of undesired track before disc finalization.	p. 28, 38
Skip ON/OFF:	Switching on/off of the function to skip undesired tracks to which skip IDs have been set.	p. 38
TOC:	Table Of Contents of a disc which allows it to be played on ordinary CD players.	p. 30
Total recording time:	Time of the disc's section which has already been recorded onto.	p. 13
Track number updating:	Function which, either automatically or manually, update the track number of the track being recorded by one.	p. 23, 25
Write-once:	A CD-R disc can be recorded only once and the recording cannot be erased. Recording always starts from the end of previous recording.	p.16

SPECIFICATIONS

1. GENERAL

Model ..... Compact disc audio system
Applicable discs ..... CDs, CD-Rs and CD-RWs
Power supply ..... AC 120 V, 60 Hz
Power consumption ..... 20 W
Operating temperature ..... +5 °C to +35 °C
(+41 °F to +95 °F)
Weight (without package) ..... 4.8 kg (10 lb 9 oz)
Max. dimensions ..... 420 (W) x 385 (D) x 105 (H) mm
16-9/16 (W) x 15-3/16 (D) x 4-1/8 (H) in.

2. AUDIO UNIT

Frequency characteristics ..... 2 Hz to 20 kHz
Playback S/N ..... 110 dB (EIAJ)
Playback dynamic range ..... 98 dB (EIAJ)
Playback total harmonic distortion ..... 0.002 % (EIAJ)
Playback channel separation ..... 100 dB
Recording S/N ..... 92 dB
Recording dynamic range ..... 92 dB
Recording total harmonic distortion ..... 0.005 %
Output voltage ..... 2 V
Wow-flutter ..... Less than measurement limit
((±0.001 % W.PEAK) (EIAJ))
Number of channels ..... 2 channels (stereo)
Digital output
Coaxial output ..... 0.5 Vp-p ±20 % (75 Ω)
Optical output .... –15 to –21 dBm (wavelength: 660 nm)
Frequency deflection: Level 2 (standard mode)

* Recording specification values are for the LINE input (ANALOG).

3. INPUT JACKS

Optical digital input jack
Coaxial digital input jack
Audio LINE input jack

4. OUTPUT JACKS

Optical digital output jack
Coaxial digital output jack
Audio LINE output jack

5. ACCESSORIES

- Remote control unit 1
- Size AA/R6 dry cell batteries 2
- Audio cable 2
- AC power cord 1
- Operating Instructions 1

NOTE:

The specifications and design of this product are subject to change without notice, due to improvements.

Should this product require service in the U.S.A. and you wish to locate the nearest Pioneer Authorized Independent Service Company, or if you wish to purchase replacement parts, operating instructions, service manuals, or accessories, please call the number shown below.

800–872–4159

Please do not ship your product to Pioneer without first calling the Customer Service Department at the above listed number for assistance.

PIONEER ELECTRONICS SERVICE, INC.
CUSTOMER SUPPORT DIVISION
P.O. BOX 1760, LONG BEACH,
CA 90801-1760, U.S.A.

For warranty information please see the Limited Warranty sheet included with your product.

Dear Customer:

Selecting fine audio equipment such as the unit you've just purchased is only the start of your musical enjoyment. Now it's time to consider how you can maximize the fun and excitement your equipment offers. This manufacturer and the Electronic Industries Association's Consumer Electronics Group want you to get the most out of your equipment by playing it at a safe level. One that lets the sound come through loud and clear without annoying blaring or distortion-and, most importantly, without affecting your sensitive hearing.

Sound can be deceiving. Over time your hearing "comfort level" adapts to higher volumes of sound. So what sounds "normal" can actually be loud and harmful to your hearing. Guard against this by setting your equipment at a safe level BEFORE your hearing adapts.

To establish a safe level:
- Start your volume control at a low setting.
- Slowly increase the sound until you can hear it comfortably and clearly, and without distortion.

Once you have established a comfortable sound level:
- Set the dial and leave it there.

Taking a minute to do this now will help to prevent hearing damage or loss in the future. After all, we want you listening for a lifetime.

We Want You Listening For A Lifetime

Used wisely, your new sound equipment will provide a lifetime o fun and enjoyment. Since hearing damage from loud noise is often undetectable until it is too late, this manufacturer and the Electronic Industries Association's Consumer Electronics Group recommend you avoid prolonged exposure to excessive noise. This list of sound levels is included for your protection.

Decibel Level	Example
30	Quiet library, soft whispers
40	Living room, refrigerator, bedroom away from traffic
50	Light traffic, normal conversation, quiet office
60	Air conditioner at 20 feet, sewing machine
70	Vacuum cleaner, hair dryer, noisy restaurant
80	Average city traffic, garbage disposals, alarm clock at two feet.
THE FOLLOWING NOISES CAN BE DANGEROUS UNDER CONSTANT EXPOSURE	
90	Subway, motorcycle, truck traffic, lawn mower
100	Garbage truck, chain saw, pneumatic drill
120	Rock band concert in front of speakers, thunderclap
140	Gunshot blast, jet plane
180	Rocket launching pad

Information courtesy of the Deafness Research Foundation.

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